



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R1–ES–2015–0070; 4500030114]

RIN 1018–BA91

Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Marbled Murrelet

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final determination.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine the critical habitat for the marbled murrelet (*Brachyramphus marmoratus*), as designated in 1996 and revised in 2011, meets the statutory definition of critical habitat under the Endangered Species Act of 1973, as amended (Act). The current designation includes

approximately 3,698,100 acres (1,497,000 hectares) of critical habitat in the States of Washington, Oregon, and California.

DATES: This final determination confirms the effective date of the final rule published at 61 FR 26256 and effective on June 24, 1996, as revised at 76 FR 61599, and effective on November 4, 2011.

ADDRESSES: This final rule is available on the internet at <http://www.regulations.gov> and <http://www.fws.gov/wafwo>. Comments and materials we received, as well as some of the supporting documentation we used in preparing this final rule, are available for public inspection at <http://www.regulations.gov>. All of the comments, materials, and documentation that we considered in this rulemaking are available by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, 510 Desmond Drive SE, Suite 102, Lacey, WA 98503–1273 (telephone 360–753–9440; facsimile 360–753–9008). The critical habitat designation for the marbled murrelet as affirmed by this final determination is in the Code of Federal Regulations at 50 CFR 17.95(b). The coordinates for this critical habitat rule were provided in the Federal Register in 1996 and 2011 and can be found at 61 FR 26256 and 76 FR 61599.

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SUPPLEMENTARY INFORMATION:

Executive Summary

Purpose of this document. On May 24, 1996, we published in the **Federal Register** a final rule designating 3,887,800 acres (ac) (1,573,340 hectares (ha)) of critical habitat for the marbled murrelet in the States of Washington, Oregon, and California (61 FR 26256). On October 5, 2011, we published in the **Federal Register** a final rule revising critical habitat for the marbled murrelet (76 FR 61599), resulting in the removal of approximately 189,671 ac (76,757 ha) of critical habitat in the States of Oregon and California. In a proposed rule published in the **Federal Register** August 25, 2015 (80 FR

51506), we reconsidered the 1996 final rule, as revised in 2011, for the purpose of assessing whether all of the designated areas meet the statutory definition of critical habitat. We did not propose any changes to the boundaries of the specific areas identified as critical habitat.

Why we needed to reconsider the rule. In 2012, the American Forest Resource Council (AFRC) and other parties filed suit against the Service, challenging the designation of critical habitat for the marbled murrelet, among other things. After this suit was filed, the Service concluded that the 1996 rule that first designated critical habitat for the marbled murrelet, as well as the 2011 rule that revised that designation, did not comport with recent case law holding that the Service should specify which areas were occupied at the time of listing, and should further explain why unoccupied areas are essential for conservation of the species. Hence, the Service moved for a voluntary remand of the critical habitat rule, requesting until September 30, 2015, to issue a proposed rule, and until September 30, 2016, to issue a final rule. On September 5, 2013, the court granted the Service's motion, leaving the current critical habitat rule in effect pending completion of the remand.

The basis for our action. Under the Act, any species that is determined to be an endangered or threatened species shall, to the maximum extent prudent and determinable, have habitat designated that is considered to be critical habitat. Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best scientific data available after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. Section 4 of the Act and its implementing

regulations in part 424 of title 50 of the Code of Federal Regulations (50 CFR part 424) set forth the procedures for designating or revising critical habitat for listed species.

We considered the economic impacts of the proposed rule. We provided our evaluation of the potential economic impacts of the proposed determination regarding critical habitat for the marbled murrelet in the proposed rule. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of the proposed determination. We have incorporated the comments into this final determination.

Public comment. The comment period on our proposed rule and our evaluation of probable economic impacts of the proposed rule was open for 60 days, beginning with the publication of the proposed rule on August 25, 2015 (80 FR 51506), through October 26, 2015. We considered all substantive and relevant comments and information received from the public during the comment period.

Previous Federal Actions

For additional information on previous Federal actions concerning the marbled murrelet, refer to the final listing rule published in the **Federal Register** on October 1, 1992 (57 FR 45328), the final rule designating critical habitat published in the **Federal Register** on May 24, 1996 (61 FR 26256), and the final revised critical habitat rule published in the **Federal Register** on October 5, 2011 (76 FR 61599). In the 1996 final critical habitat rule, we designated 3,887,800 ac (1,573,340 ha) of critical habitat in 32 units on Federal and non-Federal lands. On September 24, 1997, we completed a

recovery plan for the marbled murrelet in Washington, Oregon, and California (USFWS 1997, entire). On January 13, 2003, we entered into a settlement agreement with AFRC and the Western Council of Industrial Workers, whereby we agreed to review the marbled murrelet critical habitat designation and make any revisions deemed appropriate after a revised consideration of economic and any other relevant impacts of designation. On April 21, 2003, we published in the **Federal Register** a notice initiating a 5-year review of the marbled murrelet (68 FR 19569) and published a second information request for the 5-year review on July 25, 2003 (68 FR 44093). The 5-year review evaluation report was finished in March 2004 (McShane *et al.* 2004), and the 5-year review was completed on August 31, 2004.

On September 12, 2006, we published in the **Federal Register** a proposed revision to critical habitat for the marbled murrelet, which included adjustments to the original designation and proposed several exclusions under section 4(b)(2) of the Act (71 FR 53838). On June 26, 2007, we published in the **Federal Register** a document announcing the availability of a draft economic analysis (72 FR 35025) related to the September 12, 2006, proposed critical habitat revision (71 FR 53838). On March 6, 2008, we published a document in the **Federal Register** (73 FR 12067) stating that the critical habitat for marbled murrelet should not be revised due to uncertainties regarding U.S. Bureau of Land Management (BLM) revisions to its District Resource Management Plans in western Oregon, and that document fulfilled our obligations under the settlement agreement.

On July 31, 2008, we published in the **Federal Register** a proposed rule to revise currently designated critical habitat for the marbled murrelet by removing approximately

254,070 ac (102,820 ha) in northern California and Oregon from the 1996 designation (73 FR 44678). A second 5-year review was completed on June 12, 2009. On January 21, 2010, in response to a May 28, 2008, petition to delist the California/Oregon/Washington distinct population segment (DPS) of the marbled murrelet and our subsequent October 2, 2008, 90-day finding concluding that the petition presented substantial information (73 FR 57314; October 2, 2008), we published a 12-month finding notice in the **Federal Register** (75 FR 3424) determining that removing the marbled murrelet from the Federal List of Endangered and Threatened Wildlife (50 CFR 17.11) was not warranted. We also found that the Washington/Oregon/California population of the marbled murrelet is a valid DPS in accordance with the discreteness and significance criteria in our 1996 DPS policy (February 7, 1996; 61 FR 4722) and concluded that the DPS continues to meet the definition of a threatened species under the Act.

On October 5, 2011, we published in the **Federal Register** a final rule revising the critical habitat designation for the marbled murrelet (76 FR 61599). This final rule removed approximately 189,671 ac (76,757 ha) in northern California and southern Oregon from the 1996 designation, based on new information indicating these areas did not meet the definition of critical habitat for the marbled murrelet; this action resulted in a final revised designation of approximately 3,698,100 ac (1,497,000 ha) of critical habitat in Washington, Oregon, and California.

On January 24, 2012, AFRC filed suit against the Service to delist the marbled murrelet and vacate critical habitat. On March 30, 2013, the U.S. District Court for the District of Columbia granted in part AFRC's motion for summary judgment and denied a

joint motion for vacatur of critical habitat pending completion of a voluntary remand. Following this ruling, the Service moved for a remand of the critical habitat rule, without vacatur, in light of recent case law setting more stringent requirements on the Service for specifying how designated areas meet the definition of critical habitat. On September 5, 2013, the district court ordered the voluntary remand without vacatur of the critical habitat rule, and set deadlines of September 30, 2015, for a proposed rule and September 30, 2016, for a final rule. The court ruled in favor of the Service regarding the Service's denial of plaintiffs' petition to delist the species, and that ruling was affirmed on appeal. See *American Forest Resource Council v. Ashe*, 946 F. Supp. 2d 1 (D.D.C. 2013), *aff'd* 2015 U.S. App. LEXIS 6205 (D.C. Cir., Feb. 27, 2015).

The Service, in conjunction with the National Marine Fisheries Service, published a rule revising 50 CFR 424.12, the criteria for designating critical habitat, on February 11, 2016 (81 FR 7413); the rule became effective on March 14, 2016. The revised regulations clarify, interpret, and implement portions of the Act concerning the procedures and criteria used for adding species to the Lists of Endangered and Threatened Wildlife and Plants and designating and revising critical habitat. Specifically, the amendments make minor edits to the scope and purpose, add and remove some definitions, and clarify the criteria and procedures for designating critical habitat. These amendments are intended to clarify expectations regarding critical habitat and provide for a more predictable and transparent critical habitat designation process.

As stated in the revised version of § 424.12, the regulatory provisions in that section apply only to rulemaking actions for which the proposed rule is published after that effective date. Thus, the prior version of § 424.12 will continue to apply to any

rulemaking actions for which a proposed rule was published before that date. Since the proposed rule for marbled murrelet critical habitat was published on August 25, 2015, this final rule follows the version of § 424.12 that was in effect prior to March 14, 2016.

Summary of Changes from Proposed Rule

Based upon our evaluation of the best scientific data available and considering all information and comments received during the public comment period, we conclude that our evaluation and description of how all areas currently designated as critical habitat for the marbled murrelet meet the statutory definition under the Act is accurate as described in the proposed rule. Furthermore, we conclude that our description of the probable incremental impacts of our proposed rulemaking is accurate as described in the proposed rule. Therefore, there are no changes from the proposed rule in this final rule.

Background

A final rule designating critical habitat for the marbled murrelet was published in the **Federal Register** on May 24, 1996 (61 FR 26256). A final rule revising the 1996 designation of critical habitat for the marbled murrelet was published in the **Federal Register** on October 5, 2011 (76 FR 61599). Both of these rules are available under the “Supporting Documents” section for this docket in the Federal eRulemaking Portal: <http://www.regulations.gov> at Docket Number FWS–R1–ES–2015–0070. It is our intent to discuss only those topics directly relevant to the 1996 and revised 2011 designations of critical habitat for the marbled murrelet. A complete description of the marbled murrelet, including a discussion of its life history, distribution, ecology, and habitat, can be found

in the May 24, 1996, final rule (61 FR 26256) and the final recovery plan (USFWS 1997).

In this document, we have reconsidered our previous critical habitat designation for the marbled murrelet (May 24, 1996; 61 FR 26256, as revised on October 5, 2011; 76 FR 61599). The current designation consists of approximately 3,698,100 ac (1,497,000 ha) of critical habitat in Washington, Oregon, and California. The critical habitat consists of 101 subunits: 37 in Washington, 33 in Oregon, and 31 in California. We have reconsidered the final rule for the purpose of evaluating whether all areas currently designated meet the definition of critical habitat under the Act. We have described and assessed each of the elements of the definition of critical habitat, and evaluated whether these statutory criteria apply to the current designation of critical habitat for the marbled murrelet. Here we present the following information relevant to our evaluation:

- I. The statutory definition of critical habitat.
- II. A description of the physical or biological features essential to the conservation of the marbled murrelet, for the purpose of evaluating whether the areas designated as critical habitat provide these essential features.
- III. The primary constituent elements for the marbled murrelet.
- IV. A description of why those primary constituent elements may require special management considerations or protection.
- V. Our standard for defining the geographical areas occupied by the species at the time of listing.

- VI. The evaluation of those specific areas within the geographical area occupied at the time of listing for the purpose of determining whether designated critical habitat meets the definition under section 3(5)(A)(i) of the Act.
- VII. An additional evaluation of all critical habitat to determine whether the designated units meet the standard of being essential to the conservation of the species, under section 3(5)(A)(ii) of the Act. We conducted this analysis to assess whether all areas of critical habitat meet the statutory definition under either of the definition's prongs, regardless of occupancy. This approach is consistent with the ruling in *Home Builders Ass'n of Northern California v. U.S. Fish and Wildlife Service*, 616 F.3d 983 (9th Cir.), *cert. denied* 131 S.Ct. 1475 (2011), in which the court upheld a critical habitat rule in which the Service had determined that the areas designated, whether occupied or not, met the more demanding standard of being essential for conservation.
- VIII. Restated correction to preamble language in 1996 critical habitat rule.
- IX. Effects of critical habitat designation under section 7 of the Act.
- X. As required by section 4(b)(2) of the Act, consideration of the potential economic impacts of the rule.
- XI. Final determination that all areas currently designated as critical habitat for the marbled murrelet meet the statutory definition under the Act.
- XII. Summary of Comments and Responses

I. Critical Habitat

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Under the first prong of the Act's definition of critical habitat in section 3(5)(a)(i), areas within the geographical area occupied by the species at the time it was listed may be included in critical habitat if they contain physical or biological features: (1) which are essential to the conservation of the species; and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical and biological features within an area, we focus on the primary biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements (PCEs) are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat in section 3(5)(A)(ii), we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon the Secretary's determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential for the conservation of the species and may be included in the critical habitat designation. In addition, if critical habitat is designated or revised subsequent to listing, we may designate areas as critical habitat that may currently be unoccupied but that were occupied at the time of listing. We designate critical habitat in areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.

II. Physical or Biological Features

We identified the specific physical or biological features essential for the conservation of the marbled murrelet from studies of this species' habitat, ecology, and life history as described below. Additional information can be found in the final listing rule published in the **Federal Register** on October 1, 1992 (57 FR 45328), and the Recovery Plan for the Marbled Murrelet (USFWS 1997). In the 1996 final critical habitat rule (May 24, 1996; 61 FR 26256), we relied on the best available scientific information to describe the terrestrial habitat used for nesting by the marbled murrelet. For this 2016 rule reconsideration, the majority of the following information is taken directly from the 1996 final critical habitat rule, where the fundamental physical or

biological features essential to the marbled murrelet as described therein (in the section titled *Ecological Considerations*) remain valid (May 24, 1996; 61 FR 26256).

Where newer scientific information is available that refutes or validates the information presented in the 1996 final critical habitat rule, that information is provided here and is so noted. However, this final rule does not constitute a complete summary of all new scientific information on the biology of the marbled murrelet since 1996. Because this rule reconsideration addresses the 1996 final critical habitat, as revised in 2011 (October 5, 2011; 76 FR 61599), which designated critical habitat only in the terrestrial environment, the following section will solely focus on the terrestrial nesting habitat features. Forested areas with conditions that are capable of supporting nesting marbled murrelets are referred to as “suitable nesting habitat.” Loss of such nesting habitat was the primary basis for listing the marbled murrelet as threatened; hence protection of such habitat is essential to the conservation of the species. We consider the information provided here to represent the best available scientific data with regard to the physical or biological features essential for the marbled murrelet’s use of terrestrial habitat.

Throughout the forested portion of the species’ range, marbled murrelets typically nest in forested areas containing characteristics of older forests (Binford *et al.* 1975, p. 305; Quinlan and Hughes 1990, entire; Hamer and Cummins 1991, pp. 9–13; Kuletz 1991, p. 2; Singer *et al.* 1991, pp. 332–335; Singer *et al.* 1992, entire; Hamer *et al.* 1994, entire; Hamer and Nelson 1995, pp. 72–75; Ralph *et al.* 1995a, p. 4). The marbled murrelet population in Washington, Oregon, and California nests in most of the major types of coniferous forests (Hamer and Nelson 1995, p. 75) in the western portions of

these States, wherever older forests remain inland of the coast. Although marbled murrelet nesting habitat characteristics may vary throughout the range of the species, some general habitat attributes are characteristic throughout its range, including the presence of nesting platforms, adequate canopy cover over the nest, landscape condition, and distance to the marine environment (Binford *et al.* 1975, pp. 315–316; Hamer and Nelson 1995, pp. 72–75; Ralph *et al.* 1995b, p. 4; McShane *et al.* 2004, p. 4-39).

Individual tree attributes that provide conditions suitable for nesting (i.e., provide a nesting platform) include large branches (ranging from 4 to 32 inches (in) (10 to 81 centimeters (cm)), with an average of 13 in (32 cm) in Washington, Oregon, and California) or forked branches, deformities (e.g., broken tops), dwarf mistletoe infections, witches' brooms, and growth of moss or other structures large enough to provide a platform for a nesting adult marbled murrelet (Hamer and Cummins 1991, p. 15; Singer *et al.* 1991, pp. 332–335; Singer *et al.* 1992, entire; Hamer and Nelson 1995, p. 79). These nesting platforms are generally located greater or equal to 33 feet (ft) (10 meters (m)) above ground (reviewed in Burger 2002, pp. 41–42 and McShane *et al.* 2004, pp. 4-55–4-56). These structures are typically found in old-growth and mature forests, but may be found in a variety of forest types including younger forests containing remnant large trees. Since 1996, research has confirmed that the presence of platforms is considered the most important characteristic of marbled murrelet nesting habitat (Nelson 1997, p. 6; reviewed in Burger 2002, pp. 40, 43; McShane *et al.* 2004, pp. 4-45–4-51, 4-53, 4-55, 4-56, 4-59; Huff *et al.* 2006, pp. 12–13, 18). Platform presence is more important than the size of the nest tree because tree size alone may not be a good indicator of the presence and abundance of platforms (Evans Mack *et al.* 2003, p. 3). Tree diameter and height can

be positively correlated with the size and abundance of platforms, but the relationship may change depending on the variety of tree species and forest types that marbled murrelets use for nesting (Huff *et al.* 2006, p. 12). Overall, nest trees in Washington, Oregon, and northern California have been greater than 19 in (48 cm) diameter at breast height (dbh) and greater than 98 ft (30 m) tall (Hamer and Nelson 1995, p. 81; Hamer and Meekins 1999, p. 10; Nelson and Wilson 2002, p. 27).

Northwestern forests and trees typically require 200 to 250 years to attain the attributes necessary to support marbled murrelet nesting, although characteristics of nesting habitat sometimes develop in younger coastal redwood (*Sequoia sempervirens*) and western hemlock (*Tsuga heterophylla*) forests. Forests with older residual trees remaining from previous forest stands may also develop into nesting habitat more quickly than those without residual trees. These remnant attributes can be products of fire, windstorms, or previous logging operations that did not remove all of the trees (Hansen *et al.* 1991, p. 383; McComb *et al.* 1993, pp. 32–36). Other factors that may affect the time required to develop suitable nesting habitat characteristics include site productivity and microclimate.

Through the 1995 nesting season, 59 active or previously used tree nests had been located in Washington (9 nests), Oregon (36 nests), and California (14 nests) (Hamer and Nelson 1995, pp. 70–71; Nelson and Wilson 2002, p. 134; Washington Department of Fish and Wildlife murrelet database; California Department of Fish and Game murrelet database). All of the nests for which data were available in 1996 in Washington, Oregon, and California were in large trees that were more than 32 in (81 cm) dbh (Hamer and Nelson 1995, p. 74). Of the 33 nests for which data were available, 73 percent were on a

moss substrate and 27 percent were on litter, such as bark pieces, conifer needles, small twigs, or duff (Hamer and Nelson 1995, p. 74). The majority of nest platforms were created by large or deformed branches (Hamer and Nelson 1995, p. 79). Nests found subsequently have characteristics generally consistent with these tree diameter and platform sources (McShane *et al.* 2004, pp. 4-50 to 4-59; Bloxton and Raphael 2009, p. 8). However, in Oregon, nests were found in smaller diameter trees (as small as 19 in (49 cm)) that were distinguished by platforms provided by mistletoe infections (Nelson and Wilson 2002, p. 27). In Washington, one nest was found on a cliff (i.e., ground nest) that exhibited features similar to a tree platform, such as vertical and horizontal cover (Bloxton and Raphael 2009, pp. 8 and 33). In central California, nest platforms were located on large limbs and broken tops with 32.3 percent mean moss cover on nest limbs (Baker *et al.* 2006, p. 944).

More than 94 percent of the nests for which data were available in 1996 were in the top half of the nest trees, which may allow easy nest access and provide shelter from potential predators and weather. Canopy cover directly over the nests was typically high (average 84 percent; range 5 to 100 percent) in Washington, Oregon, and California (Hamer and Nelson 1995, p. 74). This cover may provide protection from predators and weather. Such canopy cover may be provided by trees adjacent to the nest tree, or by the nest tree itself. Canopy closure of the nest stand/site varied between 12 and 99 percent and averaged 48 percent (Hamer and Nelson 1995, p. 73). Information gathered subsequent to 1996 confirms that additional attributes of the platform are important including both vertical and horizontal cover and substrate. Known nest sites have platforms that are generally protected by branches above (vertical cover) or to the side

(horizontal cover) (Huff *et al.* 2006, p. 14). Marbled murrelets appear to select limbs and platforms that provide protection from predation (Marzluff *et al.* 2000, p. 1135; Luginbuhl *et al.* 2001, p. 558; Raphael *et al.* 2002a, pp. 226, 228) and inclement weather (Huff *et al.* 2006, p. 14). Substrate, such as moss, duff, or needles on the nest limb is important for protecting the egg and preventing it from falling (Huff *et al.* 2006, p. 13).

Nests have been located in forested areas dominated by coastal redwood, Douglas-fir (*Pseudotsuga menziesii*), mountain hemlock (*Tsuga mertensiana*), Sitka spruce (*Picea sitchensis*), western hemlock, and western red cedar (*Thuja plicata*) (Binford *et al.* 1975, p. 305; Quinlan and Hughes 1990, entire; Hamer and Cummins 1991, p. 15; Singer *et al.* 1991, p. 332, Singer *et al.* 1992, p. 2; Hamer and Nelson 1995, p. 75). Individual nests in Washington, Oregon, and California have been located in Douglas-fir, coastal redwood, western hemlock, western red cedar, and Sitka spruce trees (Hamer and Nelson 1995, p. 74).

For nesting habitat to be accessible to marbled murrelets, it must occur close enough to the marine environment for marbled murrelets to fly back and forth. The farthest inland distance for a site with nesting behavior detections is 52 mi (84 km) in Washington. The farthest known inland sites with nesting behavior detections in Oregon and California are 40 and 24 mi (65 and 39 km), respectively (Evans Mack *et al.* 2003, p. 4). Additionally, as noted below in the section titled **Definition of Geographical Area Occupied at the Time of Listing**, presence detections have been documented farther inland in Washington, Oregon, and California (Evans Mack *et al.* 2003, p. 4).

Prior to Euroamerican settlement in the Pacific Northwest, nesting habitat for the marbled murrelet was well distributed, particularly in the wetter portions of its range in

Washington, Oregon, and California. This habitat was generally found in large, contiguous blocks of forest (Ripple 1994, p. 47) as described under the *Management Considerations* section of the 1996 final critical habitat rule (May 24, 1996; 61 FR 26256).

Areas where marbled murrelets are concentrated at sea during the breeding season are likely determined by a combination of terrestrial and marine conditions. However, nesting habitat appears to be the most important factor affecting marbled murrelet distribution and numbers. Marine survey data confirmed conclusions made in the supplemental proposed critical habitat rule (August 10, 1995; 60 FR 40892) that marine observations of marbled murrelets during the nesting season generally correspond to the largest remaining blocks of suitable forest nesting habitat (Nelson *et al.* 1992, p. 64; Varoujean *et al.* 1994, entire; Ralph *et al.* 1995b, pp. 5–6; Ralph and Miller 1995, p. 358).

Consistent with Varoujean *et al.*'s (1994) 1993 and 1994 aerial surveys, Thompson (1996, p. 11) found marbled murrelets to be more numerous along Washington's northern outer coast and less abundant along the southern coast. Thompson reported that this distribution appears to be correlated with: (1) proximity of old-growth forest, (2) the distribution of rocky shoreline/substrate versus sandy shoreline/substrate, and (3) abundance of kelp (Thompson 1996, p. 11). In British Columbia, Canada, Rodway *et al.* (1995, pp. 83, 85, 86) observed marbled murrelets aggregating on the water close to breeding areas at the beginning of the breeding season and, for one of their two study areas, again in July as young were fledging. Burger (1995, pp. 305–306) reported that the highest at-sea marbled murrelet densities in both

1991 and 1993 were seen immediately adjacent to two tracts of old-growth forest, while areas with very low densities of marbled murrelets were adjacent to heavily logged watersheds. More recent evidence supports that detections of marbled murrelets at inland sites and densities offshore were higher in or adjacent to areas with large patches of old-growth, and in areas of low fragmentation and low isolation of old-growth patches (Raphael *et al.* 1995, pp. 188–189; Burger 2002, p. 54; Meyer and Miller 2002, pp. 763–764; Meyer *et al.* 2002, pp. 109–112; Miller *et al.* 2002, p. 100; Raphael *et al.* 2002a, p. 221; Raphael *et al.* 2002b, p. 337). Overall, landscapes with detections indicative of nesting behavior tended to have large core areas of old-growth and low amounts of overall edge (Meyer and Miller 2002, pp. 763–764; Raphael *et al.* 2002b, p. 331).

In contrast, where nesting habitat is limited in southwest Washington, northwest Oregon, and portions of California, few marbled murrelets are found at sea during the nesting season (Ralph and Miller 1995, p. 358; Varoujean and Williams 1995, p. 336; Thompson 1996, p. 11). For instance, as of 1996, the area between the Olympic Peninsula in Washington and Tillamook County in Oregon (100 mi (160 km)) had few sites with detections indicative of nesting behavior or sightings at sea of marbled murrelets. In California, approximately 300 mi (480 km) separate the large breeding populations to the north in Humboldt and Del Norte Counties from the southern breeding population in San Mateo and Santa Cruz Counties. This reach contained few marbled murrelets during the breeding season; however, the area likely contained significant numbers of marbled murrelets before extensive logging (Paton and Ralph 1988, p. 11, Larsen 1991, pp. 15–17). More recent at-sea surveys confirm the low numbers of

marbled murrelets in marine areas adjacent to inland areas that have limited nesting habitat (Miller *et al.* 2012, p. 775; Raphael *et al.* 2015, p. 21).

Dispersal mechanisms of marbled murrelets are not well understood; however, social interactions may play an important role. The presence of marbled murrelets in a forest stand may attract other pairs to currently unused habitat within the vicinity. This may be one of the reasons marbled murrelets have been observed in habitat not currently suitable for nesting, but in close proximity to known nesting sites (Hamer and Cummins 1990, p. 14; Hamer *et al.* 1994, entire). Although marbled murrelets appear to be solitary in their nesting habits (Nelson and Peck 1995, entire), they are frequently detected in groups above the forest, especially later in the breeding season (USFWS 1995, pp. 14–16). Two active nests discovered in Washington during 1990 were located within 150 ft (46 m) of each other (Hamer and Cummins 1990, p. 47), and two nests discovered in Oregon during 1994 were located within 100 ft (33 m) of each other (USFWS 1995, p. 14). Therefore, unused habitat in the vicinity of known nesting habitat may be more important for recovering the species than suitable habitat isolated from known nesting habitat (USFWS 1995; USFWS 1997, p. 20). Similarly, marbled murrelets are more likely to discover newly developing habitat in proximity to sites with documented nesting behaviors. Because the presence of marbled murrelets in a forest stand may attract other pairs to currently unused habitat within the vicinity, the potential use of these areas may depend on how close the new habitat is to known nesting habitat, as well as distance to the marine environment, population size, and other factors (McShane *et al.* 2004, p. 4–78).

Marbled murrelets are believed to be highly vulnerable to predation when on the nesting grounds, and the species has evolved a variety of morphological and behavioral characteristics indicative of selection pressures from predation (Ralph *et al.* 1995b, p. 13). For example, plumage and eggshells exhibit cryptic coloration, and adults fly to and from nests by indirect routes and often under low-light conditions (Nelson and Hamer 1995a, p. 66). Potential nest predators include the great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), barred owl (*Strix varia*), northwestern crow (*Corvus caurinus*), American crow (*Corvus brachyrhynchos*), and gray jay (*Perisoreus canadensis*) (Nelson and Hamer 1995b, p. 93; Marzluff *et al.* 1996, p. 22; McShane *et al.* 2004, p. 2-17). The common raven (*Corvus corax*), Steller's jay (*Cyanocitta stelleri*), and sharp-shinned hawk (*Accipiter striatus*) are known predators of eggs or chicks (Nelson and Hamer 1995b, p. 93, McShane *et al.* 2004, pp. 2-16–2-17). Based on experimental work with artificial nests, predation on eggs and chicks by squirrels and mice may also occur (Luginbuhl *et al.* 2001, p. 563; Bradley and Marzluff 2003, pp. 1183–1184). In addition, a squirrel has been documented rolling a recently abandoned egg off a nest (Malt and Lank 2007, p. 170).

From 1974 through 1993, of those marbled murrelet nests in Washington, Oregon, and California where nest success or failure was documented, approximately 64 percent of the nests failed. Of those nests, 57 percent failed due to predation (Nelson and Hamer 1995b, p. 93). Continuing research further supports predation as a significant cause of nest failure (McShane *et al.* 2004, pp. 2-16 to 2-19; Peery *et al.* 2004, pp. 1093–1094; Hebert and Golightly 2006, pp. 98–99; Hebert and Golightly 2007, pp. 222–223; Malt and Lank 2007, p. 165). The relatively high predation rate could be biased because nests

near forest edges may be more easily located by observers and also more susceptible to predation, and because observers may attract predators. However, Nelson and Hamer (1995b, p. 94) believed that researchers had minimal impacts on predation in most cases because the nests were monitored from a distance and relatively infrequently, and precautions were implemented to minimize predator attraction. More recent research has relied on remotely operated cameras for observing nests, rather than people, in order to reduce the possible effects of human attraction (Hebert and Golightly 2006, p. 12; Hebert and Golightly 2007, p. 222).

Several possible reasons exist for the high observed predation rates of marbled murrelet nests. One possibility is that these high predation rates are normal, although it is unlikely that a stable population could have been maintained historically under the predation rates observed (Beissinger 1995, p. 390).

In the 1996 rule we hypothesized that populations of marbled murrelet predators such as corvids (jays, crows, and ravens) and great horned owls are increasing in the western United States, largely in response to habitat changes and food sources provided by humans (Robbins *et al.* 1986, pp. 43–46; Johnson 1993, pp. 58–60; Marzluff *et al.* 1994, pp. 214–216; National Biological Service 1996, entire), resulting in increased predation rates on marbled murrelets. Subsequent to the 1996 rule, surveys have confirmed that corvid populations are indeed increasing in western North America as a result of land use and urbanization (Marzluff *et al.* 2001, pp. 332–333; McShane *et al.* 2004, pp. 6–11; Sauer *et al.* 2013, pp. 18–19). However, breeding bird surveys in North America indicate that great horned owls are declining in 40 percent of the areas included in the surveys (Sauer *et al.* 2013, p. 17). Barred owls (*Strix varia*), foraging generalists

that may prey on marbled murrelets, were not considered in 1996, but have subsequently been shown to be significantly increasing in numbers and distribution (Sauer *et al.* 2013, p. 17).

In the 1996 rule, we also posited that creation of greater amounts of forest edge habitat may increase the vulnerability of marbled murrelet nests to predation and ultimately lead to higher rates of predation. Edge effects have been implicated in increased forest bird nest predation rates for other species of birds (Chasko and Gates 1982, pp. 21–23; Yahner and Scott 1988, p. 160). In a comprehensive review of the many studies on the potential relationship between forest fragmentation, edge, and adverse effects on forest nesting birds, Paton (1994, p. 25) concluded that “strong evidence exists that avian nest success declines near edges.” Small patches of habitat have a greater proportion of edge than do large patches of the same shape. However, many of the studies Paton (1994, entire) reviewed involved lands where forests and agricultural or urban areas interface, or they involved experiments with ground nests that are not readily applicable to canopy nesters such as marbled murrelets. Paton (1994, p. 25), therefore, stressed the need for studies specific to forests fragmented by timber harvest in the Pacific Northwest and elsewhere.

Some research on this topic has been conducted in areas dominated by timber production and using nests located off the ground (Ratti and Reese 1988, entire; Rudnický and Hunter 1993, entire; Marzluff *et al.* 1996, entire; Vander Haegen and DeGraaf in press, entire). Vander Haegen and DeGraaf (in press, p. 8; 1996, pp. 175–176) found that nests in shrubs less than 75 m (246 ft) from an edge were three times as likely to be depredated than nests greater than 75 m (264 ft) from an edge. Likewise,

Rudnicky and Hunter (1993, p. 360) found that shrub nests on the forest edge were depredated almost twice as much as shrub nests located in the forest interior. They also observed that shrub nests were taken primarily by avian predators such as crows and jays, which is consistent with the predators believed to be impacting marbled murrelets, while ground nests were taken by large mammals such as raccoons and skunks. Ratti and Reese (1988, entire) did not find the edge relationship documented by Rudnicky and Hunter (1993, entire), Vander Haegen and DeGraaf (in press), and others cited in Paton (1994, entire). However, Ratti and Reese (1988, p. 488) did observe lower rates of predation near “feathered” edges compared to “abrupt” edges (e.g., clearcut or field edges), and suggested that the vegetative complexity of the feathered edge may better simulate natural edge conditions than do abrupt edges. These authors also concluded that their observations were consistent with Gates and Gysel’s (1978, p. 881) hypothesis that birds are poorly adapted to predator pressure near abrupt artificial edge zones.

Studies of artificial and natural nests conducted in Pacific Northwest forests also indicate that predation of forest bird nests may be affected by habitat fragmentation, forest management, and land development (Hansen *et al.* 1991, p. 388; Vega 1993, pp. 57–61; Bryant 1994, pp. 14–16; Nelson and Hamer 1995b, pp. 95–97; Marzluff *et al.* 1996, pp. 31–35). Nelson and Hamer (1995b, p. 96) found that successful marbled murrelet nests were further from edge than unsuccessful nests. Marzluff *et al.* (1996, entire) conducted experimental predation studies that used simulated marbled murrelet nests, and more recent research documented predation of artificial marbled murrelet nests by birds and arboreal mammals (Luginbuhl *et al.* 2001, pp. 562–563; Bradley and Marzluff 2003, pp. 1183–1884; Marzluff and Neatherlin 2006, p. 310; Malt and Lank

2007, p. 165). Additionally, more recent research indicates proximity to human activity and landscape contiguity may interact to determine rate of predation (Marzluff *et al.* 2000, pp. 1136–1138, Raphael *et al.* 2002a, entire; Zharikov *et al.* 2006, p. 117; Malt and Lank 2007, p. 165). Interior forest nests in contiguous stands far from human activity appear to experience the least predation (Marzluff *et al.* 1996, p. 29; Raphael *et al.* 2002a, pp. 229–231).

More recent information indicates that marbled murrelets locate their nests throughout forest stands and fragments, including along various types of natural and human-made edges (Hamer and Meekins 1999, p. 1; Manley 1999, p. 66; Bradley 2002, pp. 42, 44; Burger 2002, p. 48; Nelson and Wilson 2002, p. 98). In California and southern Oregon, areas with abundant numbers of marbled murrelets were farther from roads, occurred more often in parks protected from logging, and were less likely to occupy old-growth habitat if they were isolated (greater than 3 mi (5 km)) from other nesting marbled murrelets (Meyer *et al.* 2002, pp. 95, 102–103). Marbled murrelets no longer occur in areas without suitable forested habitat, and they appear to abandon highly fragmented areas over time (areas highly fragmented before the late 1980s generally did not support marbled murrelets by the early 1990s) (Meyer *et al.* 2002, p. 103).

The conversion of large tracts of native forest to small, isolated forest patches with large edge can create changes in microclimate, vegetation species, and predator–prey dynamics—such changes are often collectively referred to as “edge effects.” Unfragmented, older-aged forests have lower temperatures and solar radiation and higher humidity compared to clearcuts and other open areas (e.g., Chen *et al.* 1993, p. 219; Chen *et al.* 1995, p. 74). Edge habitat is also exposed to increased temperatures and light, high

evaporative heat loss, increased wind, and decreased moisture. Fundamental changes in the microclimate of a stand have been recorded at least as far as 787 ft (240 m) from the forest edge (Chen *et al.* 1995, p. 74). The changes in microclimate regimes with forest fragmentation can stress an old-growth associate species, especially a cold-water adapted seabird such as the marbled murrelet (Meyer and Miller 2002, p. 764), and can affect the distribution of epiphytes that marbled murrelets use for nesting. Branch epiphytes or substrate have been identified as a key component of marbled murrelet nests (Nelson *et al.* 2003, p. 52; McShane *et al.* 2004, pp. 4-48, 4-89, 4-104). While there are no data on the specific effects of microclimate changes on the availability of marbled murrelet nesting habitat at the scale of branches and trees, as discussed in the references above, the penetration of solar radiation and warm temperatures into the forest could change the distribution of epiphytes, and wind could blow moss off nesting platforms.

A large body of research indicates that marbled murrelet productivity is greatest in large, complex-structured forests far from human activity due to the reduced levels of predation present in such landscapes. Marbled murrelet productivity is lowest in fragmented landscapes; therefore, marbled murrelet nesting stands may be more productive if surrounded by simple-structured forests, and minimal human recreation and settlement. Human activities can significantly compromise the effectiveness of the forested areas surrounding nests to protect the birds and/or eggs from predation (Huhta *et al.* 1998, p. 464; Marzluff *et al.* 1999, pp. 3-4; Marzluff and Restani 1999, pp. 7-9, 11; Marzluff *et al.* 2000, pp. 1136-1138; De Santo and Willson 2001, pp. 145-147; Raphael *et al.* 2002a, p. 221; Ripple *et al.* 2003, p. 80).

In addition to studies of edge effects, some research initiated prior to 1996 looked at the importance of stand size. Among all Pacific Northwest birds, the marbled murrelet is considered to be one of the most sensitive to forest fragmentation (Hansen and Urban 1992, p. 168). Marbled murrelet nest stand size in Washington, Oregon, and California varied between 7 and 2,717 ac (3 and 1,100 ha) and averaged 509 ac (206 ha) (Hamer and Nelson 1995, p. 73). Nelson and Hamer (1995b, p. 96) found that successful marbled murrelets tended to nest in larger stands than did unsuccessful marbled murrelets, but these results were not statistically significant. Miller and Ralph (1995, entire) compared marbled murrelet survey detection rates among four stand size classes in California. Recording a relatively consistent trend, they observed that a higher percentage of large stands (33.3 percent) had nesting behavior detections when compared to smaller stands (19.8 percent), while a greater percentage of the smallest stands (63.9 percent) had no presence or nesting behavior detections when compared to the largest stands (52.4 percent) (Miller and Ralph 1995, pp. 210–212). However, these results were not statistically significant, and the authors did not conclude that marbled murrelets preferentially select or use larger stands. The authors suggested the effects of stand size on marbled murrelet presence and use may be masked by other factors such as stand history and proximity of a stand to other old-growth stands. Rodway *et al.* (1993, p. 846) recommended caution when interpreting marbled murrelet detection data, such as that used by Miller and Ralph (1995), because numbers of detections at different sites may be affected by variation caused by weather, visibility, and temporal shifts.

In addition to stand size, general landscape condition may influence the degree to which marbled murrelets nest in an area. In Washington, marbled murrelet detections

increased when old-growth/mature forests make up more than 30 percent of the landscape (Hamer and Cummins 1990, p. 43). Hamer and Cummins (1990, p. 43) found that detections of marbled murrelets decreased in Washington when the percentage of clear-cut/meadow in the landscape increased above 25 percent. Additionally, Raphael *et al.* (1995, p. 177) found that the percentage of old-growth forest and large sawtimber was significantly greater within 0.5 mi (0.8 km) of sites (501-ac (203-ha) circles) that were used by nesting marbled murrelets than at sites where they were not detected. Raphael *et al.* (1995, p. 189) suggested tentative guidelines based on this analysis that sites with 35 percent old-growth and large sawtimber in the landscape are more likely to be used for nesting. In California, Miller and Ralph (1995, pp. 210–211) found that the density of old-growth cover and the presence of coastal redwood were the strongest predictors of marbled murrelet presence.

In summary, the best scientific information available strongly suggests that marbled murrelet reproductive success may be adversely affected by forest fragmentation associated with either natural disturbances, such as severe fire or windthrow, or certain land management practices, generally associated with timber harvest or clearing of forest. Based on this information, the Service concluded that the maintenance and development of suitable habitat in relatively large contiguous blocks as described in the 1996 rule and the draft Marbled Murrelet (Washington, Oregon, and California Population) Recovery Plan (draft recovery plan) (USFWS 1995, pp. 70–71, finalized in 1997) would contribute to the recovery of the marbled murrelet. These blocks of habitat should contain the structural features and spatial heterogeneity naturally found at the landscape level, the stand level, and the individual tree level in Pacific Northwest forest ecosystems (Hansen

et al. 1991, pp. 389–390; Hansen and Urban 1992, pp. 171–172; Ripple 1994, p. 48; Bunnell 1995, p. 641; Raphael *et al.* 1995, p. 189). Newer information further supports the conclusion that the maintenance of suitable nesting habitat in relatively large, contiguous blocks will be needed to recover the marbled murrelet (Meyer and Miller 2002, pp. 763–764; Meyer *et al.* 2002, p. 95; Miller *et al.* 2002, pp. 105–107; Raphael *et al.* 2011, p. 44).

Summary of physical or biological features essential to the conservation of the marbled murrelet

Therefore, based on the information presented in the 1996 final critical habitat rule and more recent data that continue to confirm the conclusions drawn in that rule, we consider the physical or biological features essential to the conservation of the marbled murrelet to include forests that are capable of providing the characteristics required for successful nesting by marbled murrelets. Such forests are typically coniferous forests in contiguous stands with large core areas of old-growth or trees with old-growth characteristics and a low ratio of edge to interior. However, due to timber harvest history we recognize that, in some areas, such as south of Cape Mendocino in California, coniferous forests with relatively smaller core areas of old-growth or trees with old-growth characteristics are essential for the conservation of the marbled murrelet because they are all that remain on the landscape. Forests capable of providing for successful nesting throughout the range of the listed DPS are typically dominated by coastal redwood, Douglas-fir, mountain hemlock, Sitka spruce, western hemlock, or western red cedar, and must be within flight distance to marine foraging areas for marbled murrelets.

The most important characteristic of marbled murrelet nesting habitat is the presence of nest platforms. These structures are typically found in old-growth and mature forests, but can also be found in a variety of forest types including younger forests containing remnant large trees. Potential nesting areas may contain fewer than one suitable nesting tree per acre and nest trees may be scattered or clumped throughout the area. Large areas of unfragmented forest are necessary to minimize edge effects and reduce the impacts of nest predators to increase the probability of nest success. Forests are dynamic systems that occur on the landscape in a mosaic of successional stages, both as the result of natural disturbances (fire, windthrow) or anthropogenic management (timber harvest). On a landscape basis, forests with a canopy height of at least one-half the site-potential tree height in proximity to potential nest trees contribute to the conservation of the marbled murrelet. Trees of at least one-half the site-potential height are tall enough to reach up into the lower canopy of nest trees, which provides nesting murrelets more cover from predation. The site-potential tree height is the average maximum height for trees given the local growing conditions, and is based on species-specific site index tables. The earlier successional stages of forest also play an essential role in providing suitable nesting habitat for the marbled murrelet, as they proceed through successional stages and develop into the relatively large, unfragmented blocks of suitable nesting habitat needed for the conservation of the species.

III. Primary Constituent Elements for the Marbled Murrelet

As stated above under **Previous Federal Actions**, the rule revising 50 CFR 424.12 was published on February 11, 2016 (81 FR 7413), and became effective on March 14, 2016, and the revised version of § 424.12 applies only to rulemakings for which the proposed rule is published after that date. Thus, the prior version of § 424.12 will continue to apply to any rulemakings for which a proposed rule was published before that date. Because the proposed rule for marbled murrelet critical habitat was published on August 25, 2015, this final rule follows the version of § 424.12 that was in effect prior to March 14, 2016.

According to 50 CFR 424.12(b), we are required to identify the physical or biological features essential to the conservation of the marbled murrelet within the geographical area occupied at the time of listing, focusing on the “primary constituent elements” (PCEs) of those features. We consider PCEs to be those specific elements of the physical or biological features that provide for a species’ life-history processes and are essential to the conservation of the species. For the marbled murrelet, those life-history processes associated with terrestrial habitat are specifically related to nesting. Therefore, as previously described in our designation of critical habitat for the marbled murrelet (61 FR 26256; May 24, 1996), and further supported by more recent information, our designation of critical habitat focused on the following PCEs specific to the marbled murrelet:

- (1) individual trees with potential nesting platforms, and
- (2) forested areas within 0.5 mile (0.8 kilometer) of individual trees with potential nesting platforms, and with a canopy height of at least one-half the site-potential tree height. This includes all such forest, regardless of contiguity.

These PCEs are essential to provide and support suitable nesting habitat for successful reproduction of the marbled murrelet.

IV. Special Management Considerations or Protection

In our evaluation of whether the current designation meets the statutory definition of critical habitat, we assessed not only whether the specific areas within the geographical area occupied by the species at the time of listing contain the physical or biological features essential to the conservation of the species, but also whether those features may require special management considerations or protection. Here we describe the special management considerations or protections that apply to the physical or biological features and PCEs identified for the marbled murrelet.

As discussed above and in the 1996 final rule designating critical habitat (May 24, 1996; 61 FR 26261–26263), marbled murrelets are found in forests containing a variety of forest structure, which is in part the result of varied management practices and natural disturbance (Hansen *et al.* 1991, p. 383; McComb *et al.* 1993, pp. 32–36). In many areas, management practices have resulted in fragmentation of the remaining older forests and creation of large areas of younger forests that have yet to develop habitat characteristics suitable for marbled murrelet nesting (Hansen *et al.* 1991, p. 387). Past and current forest management practices have also resulted in a forest age distribution skewed toward younger even-aged stands at a landscape scale (Hansen *et al.* 1991, p. 387; McComb *et al.* 1993, p. 31). Bolsinger and Waddell (1993, p. 2) estimated that old-growth forest in

Washington, Oregon, and California had declined by two-thirds statewide during the previous five decades.

Current and historical loss of marbled murrelet nesting habitat is generally attributed to timber harvest and land conversion practices, although, in some areas, natural catastrophic disturbances such as forest fires have caused losses (Hansen *et al.* 1991, pp. 383, 387; Ripple 1994, p. 47; Bunnell 1995, pp. 638–639; Raphael *et al.* 2011, pp. 34–39; Raphael *et al.* 2015 in prep, pp. 94–96). Reduction of the remaining older forest has not been evenly distributed in western Washington, Oregon, and California. Timber harvest has been concentrated at lower elevations and in the Coast Ranges (Thomas *et al.* 1990, p. 63), generally overlapping the range of the marbled murrelet. In California today, more than 95 percent of the original old-growth redwood forest has been logged, and 95 percent of the remaining old-growth is now in parks or reserves (Roa 2007, p. 169).

Some of the forests that were affected by past natural disturbances, such as forest fires and windthrow, currently provide suitable nesting habitat for marbled murrelets because they retain scattered individual or clumps of large trees that provide structure for nesting (Hansen *et al.* 1991, 383; McComb *et al.* 1993, p. 31; Bunnell 1995, p. 640). This is particularly true in coastal Oregon where extensive fires occurred historically. Marbled murrelet nests have been found in remnant old-growth trees in mature and young forests in Oregon. Forests providing suitable nesting habitat and nest trees generally require 200 to 250 years to develop characteristics that supply adequate nest platforms for marbled murrelets. This time period may be shorter in redwood and western hemlock forests and in areas where significant remnants of the previous stand

remain. Intensively managed forests in Washington, Oregon, and California have been managed on average cutting rotations of 70 to 120 years (USDI 1984, p. 10). Cutting rotations of 40 to 50 years are common for some private lands. Timber harvest strategies on Federal lands and some private lands have emphasized dispersed clear-cut patches and even-aged management. Forest lands that are intensively managed for wood fiber production are generally prevented from developing the characteristics required for marbled murrelet nesting. In addition, suitable nesting habitat that remains under these harvest patterns is highly fragmented.

Within the range of the marbled murrelet on Federal lands, the Northwest Forest Plan (NWFP) (USDA and USDI 1994, entire) designated a system of Late Successional Reserves (LSRs), which provides large areas expected to eventually develop into contiguous, unfragmented forest. In addition to LSRs, the NWFP designated a system of Adaptive Management Areas, where efforts focus on answering management questions, and matrix areas, where most forest production occurs. Administratively withdrawn lands, as described in the individual National Forest or BLM land use plans, are also part of the NWFP.

In the 1996 final rule, we acknowledged the value of implementation of the NWFP as an integral role in marbled murrelet conservation. As a result, designated critical habitat on lands within the NWFP area administered by the National Forests and BLM was congruent with LSRs. These areas, as managed under the NWFP, should develop into large blocks of suitable murrelet nesting habitat given sufficient time. However, LSRs are plan-level designations with less assurance of long-term persistence than areas designated by Congress. Designation of LSRs as critical habitat complements

and supports the NWFP and helps to ensure persistence of this management directive over time. These lands managed under the NWFP require special management considerations or protection to allow the full development of the essential physical or biological features as represented by large blocks of forest with the old-growth characteristics that will provide suitable nesting habitat for marbled murrelets.

In some areas, the large blocks of Federal land under the NWFP are presently capable of providing the necessary contribution for recovery of the species. However, the marbled murrelet's range includes areas that are south of the range of the northern spotted owl (the focus of the NWFP), where Federal lands are subject to timber harvest. Therefore, the critical habitat designated on Federal lands outside of the NWFP also require special management considerations or protection to enhance or restore the old-growth characteristics required for nesting by marbled murrelets, and to attain the large blocks of contiguous habitat necessary to reduce edge effects and predation.

In the 1996 critical habitat rule (May 24, 1996; 61 FR 26256), the Service designated selected non-Federal lands that met the requirements identified in the Criteria for Identifying Critical Habitat section, in those areas where Federal lands alone were insufficient to provide suitable nesting habitat for the recovery of the species. For example, State lands were considered to be particularly important in southwestern Washington, northwestern Oregon, and in California south of Cape Mendocino. Small segments of county lands were also included in northwestern Oregon and central California. Some private lands were designated as critical habitat because they provided essential elements and occurred where Federal lands were, and continue to be, very limited, although suitable habitat on private land is typically much more limited than on

public lands. In California, south of Cape Mendocino, State, county, city, and private lands contain the last remnants of nesting habitat for the southernmost population of murrelets, which is the smallest, most isolated, and most susceptible to extirpation. All of the non-Federal lands have been and continue to be subject to some amount of timber harvest and habitat fragmentation and lower habitat effectiveness due to human activity. Therefore, all non-Federal lands within the designation require special management considerations or protection to preserve suitable nesting habitat where it is already present, and to provide for the development of suitable nesting habitat in areas currently in early successional stages.

In summary, areas that provide the essential physical or biological features and PCEs for the marbled murrelet may require special management considerations or protection. Because succession has been set back or fragmentation has occurred due to either natural or anthropogenic disturbance, those essential features may require special management considerations or protections to promote the development of the large, contiguous blocks of unfragmented, undisturbed coniferous forest with old-growth characteristics (i.e., nest platforms) required by marbled murrelets. Areas with these characteristics provide the marbled murrelet with suitable nesting habitat, and reduce edge effects, such as increased predation, resulting in greater nest success for the species. Areas that currently provide suitable nesting habitat for the marbled murrelet may require protection to preserve those essential characteristics, as the development of old-growth characteristics may take hundreds of years and thus cannot be easily replaced once lost.

V. Definition of Geographical Area Occupied at the Time of Listing

Critical habitat is defined as “the specific areas within the geographical area occupied by the species, at the time it is listed” under section (3)(5)(A)(i) of the Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection. For the purposes of critical habitat, the Service must first determine what constitutes the geographical area occupied by the species at the time of listing. We consider this to be a relatively broad-scale determination, as the wording of the Act clearly indicates that the specific areas that constitute critical habitat will be found within some larger geographical area. We consider the “geographical area occupied by the species” at the time of listing, for the purposes of section 3(5)(A)(i), to be the area that may be broadly delineated around the occurrences of a species, or generally equivalent to what is commonly understood as the “range” of the species. We consider a species occurrence to be a particular location in which individuals of the species are found throughout all or part of their life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals). Because the “geographical area occupied by the species” can, depending on the species at issue and the relevant data available, be defined on a relatively broad, coarse scale, individuals of the species may or may not be present within each area at a smaller scale within the geographical area occupied by the species. For the purposes of critical habitat, then, we consider an area to be “occupied” (within the geographical area occupied by the species) if it falls within the broader area delineated by the species’ occurrences, i.e., its range.

Within the listed DPS, at-sea observations indicate marbled murrelets use the marine environment along the Pacific Coast from the British Columbia, Canada/Washington border south to the Mexico/California border. Because they must fly back and forth to the nest from their marine foraging areas, marbled murrelets use inland areas for nesting that are nearby to those areas used by the species offshore. The inland extent of terrestrial habitat use varies from north to south and depends upon the presence of nesting structures in relation to marine foraging areas. Marbled murrelets have been detected as far inland as 70 miles (mi) (113 kilometers (km)) in Washington, but the inland extent narrows going south, where marbled murrelets generally occur within 25 mi (40 km) of the coast in California. At a broad scale, the geographical area occupied by the listed DPS of the marbled murrelet at the time of listing includes the west coast from the British Columbia, Canada/Washington border south to the Mexico/California border, ranging inland from approximately 70 mi (113 km) in Washington to roughly 25 mi (40 km) of the coast in California. However, the inland nesting habitat extends southward in California only to just south of Monterey Bay. Occurrence data that supports this geographic range includes at-sea surveys, radar detections, radio-telemetry studies, and audiovisual surveys.

At the time the marbled murrelet was listed (October 1, 1992; 57 FR 45328), occurrence data were very limited. However, the geographic range was generally known at that time, with the exception of the exact inland extent.

We now describe what is known about marbled murrelet use of the critical habitat subunits that were designated in 1996, as revised in 2011. In 1996, only terrestrial areas were designated as critical habitat. Terrestrial habitat is used by the marbled murrelet

only for the purpose of nesting; therefore, we focus on those specific areas used for nesting by the species. Because we did not designate critical habitat in the marine environment, that aspect of the species' life history or available data will not be discussed further, unless it is pertinent to the terrestrial habitat.

At the landscape scale, marbled murrelets show fidelity to marine foraging areas and may return to specific watersheds for nesting (Nelson 1997, pp. 13, 16–17, 20; Cam *et al.* 2003, p. 1123). For example, marbled murrelets have been observed to return to the same specific nest branches or sites (Hebert and Golightly 2006, p. 270; Bloxton and Raphael 2009, p. 11). Repeated surveys in nesting stands have revealed site tenacity similar to that of other birds in the alcid family (Huff *et al.* 2006, p. 12) in that marbled murrelets have been observed in the same suitable habitat areas for more than 20 years in California and Washington. Based on the high site tenacity exhibited by marbled murrelets, it is highly likely that areas found to be used by marbled murrelets since listing in 1992 were also being used at the time of listing. Therefore, in order to determine whether any particular area was being used at the time the marbled murrelet was listed, we used all years of survey data available to us (for example, through 2013 in Washington, and some data through 2014 for California).

Not all survey data are indicative of nesting. The specific types of data that we relied upon include audiovisual surveys and specific nest locations, which may have been located through radio-telemetry studies, tree climbing, chicks on the ground, or eggshell fragments. Audiovisual surveys result in a variety of detections, only some of which are specific indicators of nesting behavior tied to the area being surveyed. The types of behaviors that are indicative of nesting include: sub-canopy behaviors, circling above the

canopy, and stationary calling. Other types of detections, such as radar and fly-overs observed during audiovisual surveys, provide information regarding the general use of an area, but generally do not tie the observed individual(s) to a specific forested area (Evans Mack *et al.* 2003, pp. 20–23).

There continue to be gaps in our knowledge of marbled murrelet use in the terrestrial environment. Surveys are site/project specific and generally have been conducted for the purposes of allowing timber harvest. Surveys not conducted in adherence to the strict protocol may have missed nesting behaviors due to the cryptic nature of marbled murrelets and their nests. For example, a single visit to a location where marbled murrelets are present has only a 55 percent chance of detecting marbled murrelets (Evans Mack *et al.* 2003, p. 39). In addition, on some lands, such as Federal LSRs, our history of consultation under section 7 of the Act demonstrates that, in general, land managers choose not to conduct surveys to determine site “presence”; rather they consider the suitable habitat to be used by nesting murrelets and adjust their projects accordingly. Therefore, we recognize that our information regarding marbled murrelet use of the terrestrial landscape is incomplete; however, we have determined that the information used in this document is the best scientific data available.

We consider the geographical area occupied by the species at the time of listing for the purposes of critical habitat to be equivalent to the nesting range of the marbled murrelet, for the reasons described above. However, it is important to note that, at the time of listing, we may not have had data that definitively demonstrated the presence of nesting murrelets within each specific area designated as critical habitat. Some of these areas still lack adequate survey information. Yet because these areas fall within the

broader nesting range of the species, we consider them to have been occupied at the time of listing. For the purposes of clarity, we further evaluated the specific areas within that broader geographic range to determine whether we have documented detections of behaviors indicative of nesting by the marbled murrelet at the scale of each subunit. The following types of data are indicative of the marbled murrelet's use of forested areas for nesting and will be relied upon to make the determination of whether we have documentation of nesting behavior by critical habitat subunit:

(a) *Data indicative of nesting behavior.* A subunit with any of the following data will be considered to have a documented detection of nesting behavior. We consider one detection in a subunit sufficient to support a positive nesting behavior determination for the entire subunit.

(1) Audiovisual surveys conducted according to the Pacific Seabird Group (PSG) survey protocol (Evans Mack *et al.* 2003 or earlier versions). Detection types that are indicative of nesting include: sub-canopy behaviors (such as flying through the canopy or landing), circling above the canopy, and stationary calling.

(2) Nest locations obtained through radio-telemetry tracking, tree climbing, eggshell fragments, and chicks on the ground.

(b) *Contiguity of forested areas within which nesting behaviors have been observed.* According to the PSG protocol (Evans Mack *et al.* 2003), a contiguously forested area with detections indicative of nesting behavior is deemed to be used by nesting marbled murrelets throughout its entirety. Therefore, any subunits where there were no detections of behaviors indicative of nesting or possibly no surveys, but the forested areas in the subunit are contiguous with forested areas extending outside of the

subunit within which there are documented nesting behaviors, will be deemed to be positive in terms of a nesting behavior detection.

Radar-based marbled murrelet detections and presence-only detections (such as flying over or heard only) resulting from audiovisual surveys were not used to classify a subunit as positive in terms of nesting behavior detections. Even though these detections indicate use of an area by marbled murrelets, these types of detections do not link murrelet nesting to specific areas of forested habitat.

In Washington and California, occurrence data, including nest locations and audiovisual survey data, are maintained in State wildlife agency databases. The Washington Department of Fish and Wildlife marbled murrelet data was obtained by the Service on June 19, 2014, and includes data collected through 2013. The California Department of Fish and Wildlife's marbled murrelet occurrence database, as currently maintained by the Arcata Fish and Wildlife Office, was accessed on February 5, 2015. The database includes information on some surveys conducted through 2006, with one observation from 2014, but is incomplete for the State. Audiovisual surveys in Oregon are not maintained in a centralized database. The Service, through a cooperative agreement, provided funds to the Oregon State University to obtain and collate Oregon survey data. The data provided to the Service included surveys through 2003, mainly on Federal lands. Additionally, the BLM and Oregon Department of Forestry provided a summary of current survey data, as of March 2015, within critical habitat in Oregon. Survey data for private lands in Oregon were not available.

VI. Specific Areas Occupied at the Time of Listing

We have determined that all 101 subunits designated as critical habitat in 1996, as revised in 2011, are within the geographical range occupied by the species at the time of listing, and all 101 subunits contain the physical or biological features and PCEs essential to the conservation of the species. Evidence of the presence of PCEs is based on nests located within a subunit, nesting behavior detections, audiovisual survey station placements (generally surveys are conducted only if there are nesting platforms present in the forested area), and specific forest inventory data. All of these forms of evidence point to the presence of PCE 1, nesting platforms, within the subunit, as well as the presence of PCE 2. In addition, within all 101 subunits, the essential physical or biological features and PCEs may require special management considerations or protection, as described above, because these subunits have received or continue to receive some level of timber harvest, fragmentation of the forested landscape, and reduced habitat effectiveness from human activity. Therefore, all 101 subunits meet the definition of critical habitat under section 3(5)(A)(i) of the Act.

Of the 101 subunits, 78 (all critical habitat subunits except for those identified in Table 1, below) have either specific nesting behavior detection data within the subunit or forested areas within the subunit that are contiguous with forested areas within which nesting behaviors have been observed. In total, the 78 subunits with nesting behavior detections account for 3,335,400 ac (1,349,800 ha), or 90 percent of the total designation. These 78 subunits all contain the physical or biological features and PCEs essential to the conservation of the species, which may require special management considerations or protection, as described above, because these subunits have received or continue to

receive some level of timber harvest, fragmentation of the forested landscape, and reduced habitat effectiveness from human activity. Therefore, we conclude that these 78 subunits meet the definition of critical habitat under section 3(5)(A)(i) of the Act.

TABLE 1.—Marbled murrelet critical habitat subunits without detections indicative of nesting behavior.

Subunit
WA-04a
WA-11d
OR-01d
OR-06a
OR-06c
OR-07f
OR-07g
CA-01d
CA-01e
CA-04b
CA-05a
CA-05b
CA-06a
CA-06b
CA-07b
CA-07c
CA-08a
CA-08b
CA-09a
CA-09b
CA-11b
CA-13
CA-14c

There are 23 subunits that did not have data indicating marbled murrelet nesting behaviors at the time of listing (Table 1). All of these subunits, however, are within the range of the species at the time of listing, and, hence, we consider them to be occupied. Of these 23 subunits, 2 are in Washington, 5 are in Oregon, and 16 are in California,

totaling up to 362,600 ac (145,800 ha) or 10 percent of the designation. We have determined that all 23 subunits contain the essential physical or biological features and PCEs based on specific forest inventory data and audiovisual survey station placements. Only 7 of these 23 subunits have received partial or complete surveys to determine use by marbled murrelets. Very limited inland distribution information was available when the species was listed (1992) and in 1996 when critical habitat was designated (May 24, 1996; 61 FR 26256, pp. 26269–26270). However, continued survey efforts have filled in gaps in the distribution that were not known at the time of listing. For example, as of June 2014, the Washington Department of Fish and Wildlife murrelet detection database contained 5,225 nesting behavior detections. Of these 5,225 detections, only 254 were from surveys before 1992, and only 2,149 were prior to 1996. Therefore, our opinion is that, had surveys been conducted in many of these 23 subunits, nesting behaviors would likely have been detected.

Even if these 23 subunits were considered unoccupied at the time of listing because we do not have specific documentation of nesting behaviors, the Act permits designation of such areas as critical habitat if they are essential for the conservation of the species. We evaluated whether each of these 23 subunits are essential for the conservation of the species. In this evaluation we considered: (1) The importance of the areas to the future recovery of the species; (2) whether the areas have or are capable of providing the essential physical or biological features; and (3) whether the areas provide connectivity between marine and terrestrial habitats. As stated above, we determined that all 23 subunits contain the physical or biological features and PCEs for the marbled murrelet; therefore, all 23 subunits provide essential nesting habitat that is currently

limited on the landscape. In particular, 13 subunits in California that are south of Cape Mendocino contain the last remnants of nesting habitat in that part of California. All 101 designated subunits work together to create a distribution of essential nesting habitat from north to south and inland from marine foraging areas. All of the designated critical habitat units occur within areas identified in the draft and final recovery plans for the marbled murrelet (USFWS 1995 and 1997, entire) as essential for the conservation of the species. Maintaining and increasing suitable nesting habitat for the marbled murrelet is a key objective for the conservation and recovery of the species, by providing for increases in nest success and productivity needed to attain long-term population viability. Based upon this information, we have determined that all of the 23 subunits where nesting behaviors have not been documented are, nonetheless, essential for the conservation of the species. Therefore, even if these 23 subunits were considered unoccupied, we conclude that they meet the definition of critical habitat under section 3(5)(A)(ii) of the Act.

VII. All critical habitat is essential to the conservation of the marbled murrelet

As described above, all areas designated as critical habitat for the marbled murrelet (101 subunits) contain the physical or biological features and PCEs essential to the conservation of the species, which may require special management considerations or protection. We recognize that the physical or biological features and PCEs may not be uniformly distributed throughout these 101 subunits because historical harvest patterns and natural disturbances have created a mosaic of multiple-aged forests. Replacement of

essential physical or biological features and PCEs for the marbled murrelet can take centuries to grow.

We have additionally evaluated all currently designated critical habitat for the marbled murrelet applying the standard under section 3(5)(A)(ii) of the Act, and have determined that all 101 subunits included in this designation are essential for the conservation of the species. As detailed above, we have determined that all areas of critical habitat, whether known to be occupied at the time of listing or not, contain the physical or biological features and PCEs for the marbled murrelet. All 101 designated subunits work together to create a distribution of essential nesting habitat from north to south and inland from marine foraging areas, and occur within areas identified in the draft and final recovery plans for the marbled murrelet (USFWS 1995 and 1997, entire) as essential for the conservation of the species. All areas designated as critical habitat are essential for the conservation and recovery of the marbled murrelet by maintaining and increasing suitable nesting habitat and limiting forest fragmentation, thereby providing for increases in nest success and productivity to attain long-term population viability of the species. Therefore, we have determined that all areas currently identified as critical habitat for the marbled murrelet, whether confirmed to be occupied at the time of listing or not, are essential for the conservation of the species and meet the definition of critical habitat under section 3(5)(A)(ii) of the Act. Recent population and suitable habitat research confirms that these areas continue to be essential because the marbled murrelet population has declined since listing (Miller *et al.* 2012, entire) and continues to decline in Washington (Lance and Pearson 2015, pp. 4–5), hence suitable nesting areas are of increased importance to provide recovery potential for the marbled murrelet. In addition,

while habitat loss has slowed since adoption of the NWFP, suitable nesting habitat continues to be lost to timber harvest (Raphael *et al.* 2015 in prep, pp. 94–95).

VIII. Restated Correction

The preamble to the 1996 final critical habitat rule (May 24, 1996; 61 FR 26265) stated that, within the boundaries of designated critical habitat, only those areas that contain one or more PCEs are, by definition, critical habitat, and areas without any PCEs are excluded by definition. This statement was in error; we clarified this language in the revised critical habitat rule published in 2011 (October 5, 2011; 76 FR 61599, p. 61604), and we reemphasize this correction here. By introducing some ambiguity in our delineation of critical habitat, this language was inconsistent with the requirement that each critical habitat unit be delineated by specific limits using reference points and lines (50 CFR 424.12(c)). The Service does its best not to include areas that obviously cannot attain PCEs, such as alpine areas, water bodies, serpentine meadows, lava flows, airports, buildings, parking lots, etc. (May 24, 1996; 61 FR 26256, p. 26269). However, the scale at which mapping is done for publication in the Code of Federal Regulations does not allow precise identification of these features, and, therefore, some may fall within the critical habitat boundaries. Hence, all lands within the mapped critical habitat boundaries for the marbled murrelet are critical habitat.

IX. Effects of Critical Habitat Designation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species.

We published a final regulation with a new definition of destruction or adverse modification on February 11, 2016 (81 FR 7214), which became effective on March 14, 2016. Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinstate consultation on previously reviewed actions in instances where we have listed a new species or

subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat

conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that result in a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of the marbled murrelet. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of the species or that preclude or significantly delay development of such features. As discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the marbled murrelet. A detailed explanation of the regulatory effects of critical habitat in terms of consultation under section 7 of the Act and application of the adverse modification standard is provided in the October 5, 2011, final rule revising critical habitat for the marbled murrelet (76 FR 61599).

X. Economic Considerations

As required by section 4(b)(2) of the Act and its implementing regulations, we fully considered the economic impact that may result from specifying any particular area as critical habitat. If critical habitat has not been previously designated, the probable economic impact of a proposed critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.” The “without critical habitat” scenario represents the baseline for the analysis, and includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat (e.g., under the Federal listing as well as other Federal, State, and local regulations). In this case the baseline represents the costs of all efforts attributable to the listing of the species under the Act (i.e., conservation of the species and its habitat incurred regardless of whether critical habitat is designated). The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. These are the conservation efforts and associated impacts that would not be expected but for the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These incremental costs represent the potential economic impacts we consider in association with a designation or revision of critical habitat, as required by the Act.

Baseline protections as a result of the listed status of the marbled murrelet include sections 7, 9, and 10 of the Act, and any economic impacts resulting from these

protections to the extent they are expected to occur absent the designation of critical habitat:

- Section 7 of the Act, even absent critical habitat designation, requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out will not likely jeopardize the continued existence of any endangered or threatened species. Consultations under the jeopardy standard result in administrative costs, as well as impacts of conservation efforts resulting from consideration of this standard.
- Section 9 defines the actions that are prohibited by the Act. In particular, it prohibits the “take” of endangered wildlife, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The economic impacts associated with this section manifest themselves in sections 7 and 10.
- Under section 10(a)(1)(B) of the Act, an entity (e.g., a landowner or local government) may develop an HCP for a listed animal species in order to meet the conditions for issuance of an incidental take permit in connection with a land or water use activity or project. The requirements posed by the HCP may have economic impacts associated with the goal of ensuring that the effects of incidental take are adequately avoided or minimized. The development and implementation of HCPs is considered a baseline protection for the species and habitat unless the HCP is determined to be precipitated by the designation of critical habitat, or the designation influences stipulated conservation efforts under HCPs.

In the present rulemaking, we are not starting from a “without critical habitat” baseline. In this particular case, critical habitat has been in place for the marbled murrelet since May 24, 1996 (61 FR 26256), and was most recently revised on October 5, 2011 (76 FR 61599). Because the 2011 revision resulted only in the removal of some areas of critical habitat, all areas remaining in the current designation have been critical habitat for the marbled murrelet since 1996. This current critical habitat designation formed the baseline for our consideration of the potential economic impacts of the proposed rule.

In the proposed rule, we described our evaluation and conclusion that all of the currently designated areas meet the statutory definition of critical habitat for the marbled murrelet. Specifically, we clarified that all areas are within the range of the marbled murrelet and, therefore, occupied by the species at the time of listing, and contain the physical or biological features essential to the conservation of the species, which may require special management consideration or protection. Furthermore, although all areas are considered to have been occupied at the time of listing, all areas do not necessarily have specific data indicating known detections of nesting murrelets at the time of listing. Upon further evaluation, we determined that all critical habitat, regardless of whether we have information indicating definitive use by nesting murrelets at the time of listing, is essential for the conservation of the species. As a result of our evaluation, we did not propose any modification to the boundaries of critical habitat for the marbled murrelet, nor did we propose any changes to the definition of the PCEs (May 24, 1996; 61 FR 26256). We fully considered all substantive comments and relevant information received on our proposed determination of critical habitat for the marbled murrelet; our

consideration of this information did not lead to any changes from our proposed rule in this final rule.

We considered the probable incremental economic impacts of the proposed rule with regard to critical habitat for the marbled murrelet. As described in our proposed rule, critical habitat has already been in place for the marbled murrelet for 20 years; as we are not changing any of the critical habitat boundaries or PCEs, and as Federal action agencies consult on the effects to the PCEs rather than the species itself with regard to actions in critical habitat, we do not anticipate any additional costs as a result of the clarification of areas occupied at the time of listing. Our evaluation of the probable economic impacts of our proposed determination of critical habitat for the marbled murrelet was available for public review during the comment period on our proposed rule from August 25, 2015, through October 26, 2015 (August 25, 2015; 80 FR 51506). Following the close of the comment period, we reviewed and evaluated all information submitted that may pertain to our consideration of the probable incremental economic impacts of this critical habitat rule. We fully considered public comment on our evaluation, as well as information supplied by the action agencies with whom we regularly consult with regard to marbled murrelet critical habitat (details below). Those action agencies confirmed our conclusion that our clarification of how the areas currently designated as critical habitat meet the statutory definition under the Act is unlikely to result in any additional costs, regardless of occupancy status.

Our conclusion that this critical habitat rule will not result in incremental economic impacts is based upon the following evaluation. Critical habitat designation will not affect activities that do not have any Federal involvement; designation of critical

habitat affects only activities conducted, funded, permitted, or authorized by Federal agencies. In areas where the marbled murrelet is present, Federal agencies already are required to consult with the Service under section 7 of the Act on activities they fund, permit, or implement that may affect the species. In this particular case, because all areas that we have considered are already designated as critical habitat for the marbled murrelet, where a Federal nexus occurs, consultations to avoid the destruction or adverse modification of critical habitat have been incorporated into the existing consultation process. Federal agencies have been consulting under section 7 of the Act on critical habitat for the marbled murrelet for approximately 20 years. As our proposed rule did not include the addition of any new areas as critical habitat, any probable economic impacts resulting from the proposed rule would result solely from our clarification of how all of the areas currently designated meet the statutory definition of critical habitat. The incremental economic impacts of our rulemaking would, therefore, be equal to any additional costs incurred as the result of a difference between the outcome of consultations as they are currently conducted and consultations as they would be conducted if the proposed rule were to become final.

Based upon our evaluation and as described in our proposed rule, we do not anticipate changes to the consultation process or effect determinations made for critical habitat as a result of our evaluation and conclusion that all areas meet the definition of critical habitat under the Act. In addition, we do not anticipate requiring additional or different project modifications than are currently requested when an action “may affect” critical habitat. Therefore, it is the Service’s expectation that this final rule clarifying the 1996 critical habitat designation, as revised in 2011, which explains how all areas within

the boundaries of the current designation meet the definition of critical habitat under the Act, will result in no additional (incremental) economic impacts.

In order to confirm the accuracy of our assessment of the potential economic impacts of the proposed rule, we asked those Federal action agencies that manage lands that are critical habitat or with whom we have consulted over the past 20 years on marbled murrelet critical habitat to review our evaluation and characterization of the changes, if any, to consultation under section 7 that may be anticipated as a consequence of the proposed rule. We specifically asked each agency whether our proposed rule would be likely to result in any additional economic impacts on their agency (incremental impacts), above and beyond those already incurred as a result of the current critical habitat designation for the marbled murrelet (baseline impacts). Based on our consultation history with Federal agencies, it is our understanding that action agencies currently consult on effects to marbled murrelet critical habitat through an analysis of the effects to the PCEs. We asked the action agencies to confirm or correct this understanding, and to verify our characterization of how these consultations take place under the current designation, which we described as follows:

- If an action will take place within designated critical habitat, the action agency considers the action area to be critical habitat, irrelevant of the presence of PCEs. The action agency then determines whether there are PCEs within the action area. If the action agency determines there are no PCEs within the action area, the agency makes a “no effect” determination and the Service is not consulted.

- If the action agency determines there are PCEs within the action area, they analyze the action’s potential effects on the PCEs, which may result in a “no effect” or “may effect” determination. If the action agency determines the action “may affect” the PCEs, they undergo section 7 consultation with the Service.

Whether the critical habitat subunit or action area is considered to be “occupied” by the species is irrelevant to the effect determination made for critical habitat. Rather, the determination of “occupancy” is relevant to the effect determination for the species and any minimization measures that may be implemented (such as project timing).

In the proposed rule we clarified that we consider all areas to have been occupied by the species at the time of listing, and that all of these areas have the PCEs. Because occupancy of the critical habitat subunit or action area is considered irrelevant to the effect determination made for critical habitat, the Service does not anticipate changes to the consultation process or effect determinations made for critical habitat as a result of this determination. In addition, the Service does not anticipate requiring additional or different project modifications than are currently requested when an action “may affect” critical habitat. Therefore, we conclude that this final rule clarifying the 1996 critical habitat designation, as revised in 2011, which is limited to explaining how all areas within the boundaries of the current designation meet the definition of critical habitat under the Act, will not result in additional (incremental) costs to the Federal agencies.

As noted above, we solicited review and comment on our draft summary of the anticipated economic impacts of the proposed rule from seven Federal agencies with whom we regularly consult on marbled murrelet critical habitat (the U.S. Forest Service

(USFS), U.S. Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Indian Affairs (BIA), U.S. Army Corps of Engineers, Federal Highway Administration, and Federal Energy Regulatory Commission). We received responses from four of these agencies: the USFS representing multiple national forests, the BLM representing multiple districts, the NPS representing Redwood National Park and State Parks partnership, and the BIA. All responses agreed with our evaluation of the potential incremental effects of the proposed rule, and confirmed that they did not anticipate any additional costs as a result of the clarification of areas occupied at the time of listing. Our initial letter of inquiry and all responses received from the action agencies are available for review in the Supplemental Materials folder at <http://www.regulations.gov>, Docket No. FWS–R1–ES–2015–0070.

We additionally considered any potential economic impacts on non-Federal entities as a result of the proposed rule. In our experience, any economic impacts to non-Federal parties are generally associated with the development of HCPs under section 10(a)(1)(B) of the Act. However, as described above, in most cases the incentive for the development of an HCP is the potential issuance of an incidental take permit in connection with an activity or project in an area where a listed animal species occurs. HCPs are seldom undertaken in response to a critical habitat designation, but in such a case the costs associated with the development of an HCP prompted by the designation of critical habitat would be considered an incremental impact of that designation. In this particular situation, because we did not propose any changes to the boundaries of critical habitat, we did not anticipate the initiation of any new HCPs in response to the proposed rule; therefore, we did not anticipate any costs to non-Federal parties associated with

HCP development. We did not receive any information during the public comment period that suggested this conclusion was in error.

Other potential costs to non-Federal entities as a result of critical habitat designation might include costs to third-party private applicants in association with Federal activities. In most cases, consultations under section 7 of the Act involve only the Service and other Federal agencies, such as the U.S. Army Corps of Engineers. Sometimes, however, consultations may include a third party involved in projects that involve a permitted entity, such as the recipient of a Clean Water Act section 404 permit. In such cases, these private parties may incur some costs, such as the cost of applying for the permit in question, or the time spent gathering and providing information for a permit. These costs and administrative effort on the part of third-party applicants, if attributable solely to critical habitat, would be incremental impacts of the designation. In this particular case, however, because we did not propose any boundary changes to the current critical habitat designation, we did not anticipate any change from the current baseline conditions in terms of potential costs to third parties; therefore, we expected any incremental impacts to non-Federal parties associated with the proposed rule to be minimal. Again, we did not receive any information during the public comment period that would suggest this conclusion is in error.

Based on our evaluation, the information provided to us by the Federal action agencies within the critical habitat area under consideration, and the information received during the public comment period on our proposed rule, we conclude that this final rule will result in little if any additional economic impact above baseline costs.

XI. Determination

We have examined all areas designated as critical habitat for the marbled murrelet in 1996 (May 24, 1996; 61 FR 26256), as revised in 2011 (October 5, 2011; 76 FR 61599), and evaluated whether all areas meet the definition of critical habitat under section 3(5)(A) of the Act. Based upon our evaluation, we have determined that all 101 subunits designated as critical habitat are within the geographical area occupied by the species at the time of listing, and each of these subunits provides the physical or biological features and PCEs essential to the conservation of the species, which may require special management considerations or protections. Therefore, we conclude that all areas designated as critical habitat for the marbled murrelet meet the definition of critical habitat under section 3(5)(A)(i) of the Act. Of the 101 subunits, 78 of those subunits had documented detections of nesting behavior at the time of listing. We have determined that we do not have sufficient data to definitively document nesting behavior within the other 23 subunits at the time of listing. However, even if these 23 subunits were considered unoccupied, the Secretary has determined that they are essential for the conservation of the species, as they contribute to the maintenance or increase of suitable nesting habitat required to achieve the conservation and recovery of the marbled murrelet; therefore, we conclude that they meet the definition of critical habitat under section 3(5)(A)(ii) of the Act.

In addition, recognizing that the detection of nesting behaviors or the presence of essential physical or biological features or PCEs within a subunit may be evaluated on multiple scales, such that at some finer scales some subset of the subunit may be

considered unoccupied or lacking in PCEs, we evaluated the designation in its entirety as if it were unoccupied under section 3(5)(A)(ii) of the Act, and found that all areas of critical habitat are essential for the conservation of the species. We have here clarified that we have evaluated all critical habitat for the marbled murrelet, and have concluded that in all cases the areas designated as critical habitat for the marbled murrelet meet the definition of critical habitat under section 3(5)(A) of the Act. In addition, as required by section 4(b)(2) of the Act, we have considered the potential economic impact of this clarification, and we have concluded that any potential economic effects resulting from this rulemaking are negligible.

Therefore, we conclude that, under the Act, critical habitat as currently designated for the marbled murrelet in the Code of Federal Regulations remains valid.

XII. Summary of Comments and Responses

We requested written comments from the public on the proposed determination of critical habitat for the marbled murrelet in a proposed rule published on August 25, 2015 (80 FR 51506). As described in that proposed rule, our purpose was to reconsider the final rule designating critical habitat for the marbled murrelet (May 24, 1996; 61 FR 26256, as revised on October 5, 2011; 76 FR 61599) for the purpose of evaluating whether all areas currently designated meet the definition of critical habitat under the Act. To that end, we specifically sought comments concerning: (1) What areas within the currently designated critical habitat for the marbled murrelet were occupied at the time of listing and contain features essential to the conservation of the species; (2) special management considerations or protection that may be needed in critical habitat areas,

including managing for the potential effects of climate change; (3) what areas within the currently designated critical habitat are essential for the conservation of the species and why; and (4) information on the extent to which the description of economic impacts is a reasonable estimate of the likely economic impacts of the proposed determination.

During the comment period, which closed on October 26, 2015, we received 16 comment letters from organizations or individuals directly addressing the proposed critical habitat designation.

Eleven of these letters provided substantive comments (beyond a succinct expression of agreement or opposition) on the proposed rule. Five of the comment letters expressed support of our 1996 designation, one opposed the 1996 designation, and five did not express a particular opinion regarding the 1996 designation and whether it meets the statutory definition, but offered other suggestions or information regarding critical habitat for the marbled murrelet.

Several comments we received were outside the scope of the proposed rule, which was limited to the specific purpose for which the court remanded this rule, which was to assess whether all of the designated areas meet the statutory definition of critical habitat. Examples of comments outside of the scope of the proposed rule included:

- (a) Requests that we designate additional critical habitat;
- (b) A request that we apply the Service's proposed policy for excluding lands included in Habitat Conservation Plans (*See* 79 FR 27052 (May 12, 2014) at 27055);
- (c) Requests that we designate marine areas as critical habitat;
- (d) A request that surrounding encumbered lands be freed up as a more available revenue source; and

(e) A request to complete a 5-year review.

These comments are beyond the scope of the proposed rule, and some would require separate rulemaking to be considered. Accordingly, we have not specifically responded to these comments in this final rule.

All substantive information provided during the comment period has either been incorporated directly into this final determination or addressed below. Comments received were grouped into general issues specifically relating to the proposed critical habitat determination, and are addressed in the following summary and incorporated into the final rule as appropriate.

Comments from States

Section 4(i) of the Act states, “the Secretary shall submit to the State agency a written justification for his failure to adopt regulations consistent with the agency’s comments or petition.” Comments received from the State regarding the determination of critical habitat for the marbled murrelet are addressed below.

(1) *Comment:* The Oregon Department of Forestry stated they have not experienced impacts, positive or negative, associated with the designation of critical habitat. Critical habitat has not been an obstacle to the effective implementation of their forest management plans.

Our response: Thank you for the information.

(2) *Comment:* The Oregon Department of Forestry and one private organization expressed the opinion that we relied heavily on technical information associated with the

1996 designation and largely or completely ignored newer scientific literature. In particular they pointed out that all the referenced nest site data is decades old.

Our response: The sole purpose of our proposed rule was to evaluate whether all areas currently designated as critical habitat for the marbled murrelet meet the statutory definition of critical habitat; we did not propose to revise critical habitat as a whole. In doing so, we did not ignore or discount any available relevant literature, including publications made available after the 1996 designation of critical habitat. In fact, many of the publications the commenters indicate we ignored, such as McShane *et al.* 2004, are cited in the proposed rule (see, for example, citations on pp. 51509–51512 of 80 FR 51506; August 25, 2015). If our review of the best available scientific data as reflected in the more recently published literature had indicated a change in our understanding of the essential habitat features for the marbled murrelet, we might have proposed further revision. However, we reviewed all available scientific data relevant to this question and found that it did not indicate that such a change was appropriate. Rather, the more recently published literature continues to support the physical or biological factors and primary constituent elements (PCEs) as described in the 1996 critical habitat final rule and is, therefore, consistent with both our proposed and final rules.

The commenters also indicate that the nest and occupancy data we relied upon were outdated. We disagree. On page 51516 of the proposed rule (80 FR 51506; August 25, 2015), we denote the years of survey data that we relied upon, which included all available nests, occupied behaviors, and presence behaviors within the analysis area. In Washington, the information included data collected through 2013. In Oregon, some survey data was as recent as 2014. In California, most of the available data was collected

through 2006, with one data point from 2014. These data present the most recent and best data available for us to use in our reconsideration.

(3) *Comment:* The Oregon Department of Forestry commented that the boundaries of critical habitat follow ownerships rather than habitat.

Our response: Our implementing regulations at 50 CFR 424.12(c), in effect at the time of our designation, specify that “Each critical habitat will be defined by specific limits using reference points and lines as found on standard topographic maps of the area Ephemeral reference points (e.g., trees, sand bars) shall not be used in defining critical habitat.” Although by definition the foundation of our critical habitat designation is based on habitat characteristics (the presence of essential physical or biological features, or areas otherwise determined to be essential for the conservation of the species), to be useful those specific areas that fall within the designation must be identifiable “on the ground.” Characteristics such as the location of forest edges, for example, which might serve as a habitat-based boundary for marbled murrelets, are expected to vary over space and time and thus are not useful in this regard. For this reason, we utilized ownership and administrative boundaries, which are relatively more stable, to define the boundaries of our critical habitat units, after reliance on the habitat characteristics to define critical habitat for the marbled murrelet located within those administrative boundaries.

(4) *Comment:* The Oregon Department of Forestry recommended that critical habitat should be focused on older, high-quality habitat rather than younger stands.

Our response: We agree with the basic principle of this recommendation, and in fact the critical habitat does focus on older, high-quality habitat, which is likely to equate

to forested areas that contain trees with suitable nesting structures (PCE 1). However, limiting the critical habitat designation to areas that only contain PCE 1 would not be sufficient to achieve the conservation of the species because marbled murrelets need large contiguous blocks of forested areas (Recovery Plan for the Marbled Murrelet, USFWS 1997). It is not necessary that the entirety of these large, contiguous blocks of forest is represented by trees with characteristics associated with late-successional old growth; a large block of forested area may be constituted of trees with suitable nesting structures surrounded by areas of younger forest. Marbled murrelet critical habitat, therefore, comprises two PCEs, which serve separate, but intertwined, purposes. Forested areas within 0.5 mile (0.8 kilometer) of individual trees with potential nesting platforms with a canopy height of at least one-half the site-potential tree height (PCE 2) provide the larger forested areas that are necessary to minimize edge effects and reduce the impacts of nest predators to increase the probability of nest success, in addition to providing forest cohesion around suitable nesting trees (PCE 1), which has been associated with murrelet use and to provide for the development of suitable nesting trees. Because these younger stands may provide this essential feature, critical habitat for the marbled murrelet is not strictly limited to only older stands of forest.

(5) *Comment:* The Washington Department of Natural Resources (WDNR) requested that the critical habitat unit descriptions, tables, and maps be updated to remove the lands excluded because of inclusion in the Department's Habitat Conservation Plan (HCP).

Our response: The 1996 critical habitat designation for the marbled murrelet stipulates by text that "Critical habitat units do not include non-federal lands covered by a

legally operative incidental take permit for marbled murrelets issued under section 10(a) of the Act.” However, the WDNR HCP for the marbled murrelet was not completed until 1997, after critical habitat designation; therefore, all WDNR lands were mapped in the final critical habitat. Once the WDNR obtained a legally operative incidental take permit for marbled murrelets issued under section 10(a) of the Act in 1997, the HCP lands designated as critical habitat were excluded by the text referenced above. As long as WDNR has a legally operative incidental take permit for marbled murrelets, their lands remain excluded by text from critical habitat. However, should their permit be revoked, terminated, or expire, WDNR lands would revert back to critical habitat. WDNR lands, therefore, continue to remain mapped and accounted for in the total designation acreage.

Further, as noted above, the purpose of this proposed action was to consider whether our 1996 designation meets the statutory definition of critical habitat; we did not propose revision of critical habitat as a whole. Therefore, we did not propose to reconsider or reevaluate any of the exclusions contained in the 1996 final designation for consistency with our current exclusion policies.

Public Comments

(6) *Comment:* One private organization stated that our proposed rule did not contain a finding that areas not occupied at the time of the listing are essential for the conservation of the species. At the same time, this organization also contends that our determination that all 101 subunits would qualify for designation under 16 U.S.C. 1532 (5)(A)(ii) as “essential to the conservation of the species” has no legal bearing on a

designation under 16 U.S.C. 1532 (5)(A)(i) for the geographical area occupied at the time of listing. The comment letter suggests that the subsection (ii) standard applies only to areas that are outside the geographical area occupied at the time of listing, and that the “Service has determined that all designated critical habitat is within the geographical area occupied at the time of listing. For such areas, they suggest critical habitat can only be designated under subsection (i), and only if the physical or biological features (PCEs) “are found” on those areas.”

Our response: We refer the commenter to section VII on pages 51517–51518 of the proposed rule (80 FR 51506; August 25, 2015), which provides our finding that all currently designated critical habitat is essential to the conservation of the marbled murrelet. As stated there, we first determined that all areas designated as critical habitat are within the geographical area occupied by the species at the time of listing and contain the physical or biological features and PCEs essential to the conservation of the species, which may require special management considerations or protection. However, we acknowledged that the physical or biological features and PCEs may not be uniformly distributed throughout the subunits, and, therefore, we additionally conducted an evaluation of all subunits under the standards of section 3(5)(A)(ii) of the Act. While this evaluation was not technically necessary, we determined it to be a conscientious application of all methods of designating critical habitat, regardless of occupancy, differing interpretations of occupancy, or differing scales of analysis. We expressly stated in our determination that all areas currently identified as critical habitat for the marbled murrelet, whether confirmed to be occupied at the time of listing or not, are essential for the conservation of the species and meet the definition of critical habitat under section

3(5)(A)(ii) of the Act (see section XI, Determination, on page 51520 of the proposed rule, 80 FR 51506; August 25, 2015). This approach is consistent with the ruling in *Home Builders Ass'n of Northern California v. U.S. Fish and Wildlife Service*, 616 F.3d 983 (9th Cir.), *cert. denied* 131 S.Ct. 1475 (2011), in which the court upheld a critical habitat rule in which the Service had determined that the areas designated, whether occupied or not, met the more demanding standard of being essential for conservation. See also our response to Comment (7).

(7) *Comment:* The same private organization stated that the Service cannot designate areas within the geographical area occupied at the time of listing that lack any of the physical or biological features simply by combining those areas in a large “subunit” consisting of thousands of acres including some other areas that do contain the features. If the presence of physical and biological features anywhere within a large critical habitat unit was sufficient to find the presence of physical and biological features everywhere within the unit, nothing would prevent the administrative creation of a single multimillion-acre critical habitat “unit” and finding every acre to contain physical and biological features because a single small area contains such features. This interpretation would render the statutory terms meaningless. In particular, the commenting organization noted that the designation included lands delineated as Late Successional Reserves under the Northwest Forest Plan, which they contend does not meet the statutory standard because the physical or biological features and PCEs may not be uniformly distributed throughout a subunit.

Our response: We agree with the commenter that an interpretation of the statute that would lead to the creation of a single multimillion-acre critical habitat unit and

declaring every acre within that unit to contain physical and biological features on the basis of a small subset of the unit containing such features would not be reasonable. However, we disagree that such an interpretation reflects our designation of critical habitat for the marbled murrelet. Marbled murrelets require forested habitats for nesting, particularly trees with nesting platforms (which are typically found in forests with late seral characteristics) embedded within larger areas of contiguous forest that may serve as a “buffer” area to insulate nesting murrelets from edge effects, such as invasion by corvid predators (crows or ravens) or negative microclimatic conditions (also noting that the beneficial effects of these surrounding areas may be provided by younger forest stands). In addition, as noted in our proposed rule, trees with suitable nesting platforms may also be found in areas of younger forest containing remnant large trees.

Forests are dynamic systems, and cannot be expected to remain static on the landscape; the progression of forest habitats through a series of seral stages is a fundamental principle of forest ecology. As a result of both natural disturbance and anthropogenic activities, forests occur in a mosaic of age-structured conditions. It is, therefore, to be expected that the designation of critical habitat for a wide-ranging forest species requiring nest trees with mature or old-growth characteristics will additionally include surrounding forests in a mosaic of both old and younger forests; this simply reflects how forest patches of varying ages and structural condition are distributed across the landscape.

Our implementing regulations at 50 CFR 424.12(b)(5)(d) state: “When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat.” In this

case, our designation of critical habitat for the marbled murrelet is focused primarily on areas of forest with late-successional characteristics that provide suitable nesting habitat (PCE 1), surrounded by areas of potentially younger forest (PCE 2). Because marbled murrelets require large blocks of contiguous forest habitat for successful nesting, we have noted that special management considerations may be required to provide for the development of suitable nesting habitat for those areas currently in early successional stages.

Taking all of these factors into consideration, we considered the best available scientific information and concluded that the 101 subunits of critical habitat designated here for the marbled murrelet contain the essential physical or biological features and PCEs at a scale appropriate for the conservation of the species and representative of the natural distribution of these features on the landscape. It is not biologically reasonable to expect the PCEs to be found on every acre of each subunit of a critical habitat designation for a wide-ranging species that requires large blocks of contiguous forest habitat for successful nesting. Furthermore, because of the fundamental dynamic nature of successional forests, we do not expect such features to be distributed uniformly across critical habitat. We dispute the commenter's argument that areas within the critical habitat designation do not meet the statutory standard because the physical or biological features and PCEs are not uniformly distributed throughout the subunits. There is no statutory or regulatory requirement that the physical or biological features or PCEs be "uniformly distributed" throughout critical habitat. Section 3(5)(A)(i) of the Act requires in plain language only that the physical or biological features essential to the conservation of the species "are found" on those specific areas identified as critical

habitat within the geographical area occupied by the species at the time it is listed. Our designation of critical habitat for the marbled murrelet clearly meets the statutory standard. We note that the U.S. Court of Appeals for the Ninth Circuit recently affirmed a similar interpretation of the Act in *Alaska Oil and Gas Association v. Jewell*, 2016 U.S. App. LEXIS 3624 (9th Cir., Feb. 29, 2016), in which the court upheld the Service’s designation of critical habitat for the polar bear. The court held that, in its designation of denning habitat, the Service was not required to identify specifically where all elements of the denning habitat PCE were located within each 5-mile increment of the designated area, and the Service adequately explained why it adopted a method designed to capture a “robust” estimation of inland den use.

Finally, we recognize that there may be different approaches to defining the “geographical area occupied by the species at the time it is listed,” depending largely on the scale at which the area occupied is considered. Here we have defined that area on a relatively large scale, essentially equivalent to the range of the species, such that all critical habitat is considered occupied by the species. We have further determined, as described in this document, that the physical or biological features essential to the conservation of the species, and which may require special management considerations or protection, are found in each of the 101 subunits within the geographical area occupied by the species at the time it was listed, as identified in this designation of critical habitat. All critical habitat for the marbled murrelet therefore meets the definition of critical habitat under section (3)(5)(A)(i) of the Act.

This commenter asserted that the proposal includes “millions of acres that were not occupied at the time of listing.” In the proposed rule, we explained why this assertion

is incorrect, in light of our interpretation of “occupied” as being equivalent to the range of the species. But, even if some areas of the critical habitat designation were considered unoccupied at the time of listing, we have determined that all critical habitat for the marbled murrelet, as currently designated, is essential for the conservation of the species (see section VII of the proposed rule). Hence, the designated areas meet the definition of critical habitat set forth in section 3(5)(A)(ii) of the Act. That alternative definition does not require that PCEs be present.

In this case, regardless of the scale at which the geographical area occupied by the species at the time it was listed is considered, we have determined that all areas currently designated as critical habitat for the marbled murrelet meet the definition of critical habitat whether evaluated under the standards of subsection (i) or (ii) of section 3(5)(A) of the Act. This approach is consistent with the ruling in *Home Builders Ass’n of Northern California v. U.S. Fish and Wildlife Service*, 616 F.3d 983, 990 (9th Cir.), cert. denied 131 S.Ct. 1475 (2011), in which the court held that, where the Service had determined in a critical habitat rule that all areas met the more demanding standard under section 3(5)(A)(ii) for unoccupied areas, there was no need to classify particular areas as occupied or unoccupied, and any possible overlap with occupied areas “poses no problem.” The court observed that “Courts routinely apply similar reasoning in cases where a standard is unclear yet the result is the same under even the highest standard.” *Id.* The court also held that its prior ruling in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir. 2004), “requires FWS to be *more* generous in defining area as part of a critical habitat designation.” *Id.* at 989 (emphasis in original).

(8) *Comment:* The same private organization stated that an area can only be designated as critical habitat under section 3(5)(A)(i) of the Act if it meets two separate requirements with two different temporal bounds: (1) The area must be within the geographic area occupied by the species at the time it is listed, and (2) the area must currently contain (“on which are found”) physical or biological features that are “essential to the conservation of the species” [emphasis added by commenter].

Our response: In our designation of critical habitat in 1996, as revised in 2011, we determined that the physical or biological features essential to the conservation of the marbled murrelet were found on all areas occupied by the species at the time of listing. In the analysis presented in this document, we have reevaluated all designated critical habitat for the marbled murrelet, and have additionally determined that the physical or biological features essential to the conservation of the species are currently found in all critical habitat subunits as well, whether considered occupied at the time of listing or not. Therefore, whether considered at the time of listing, at designation, or at present, we conclude that all critical habitat for the marbled murrelet meets the definition of critical habitat under section 3(5)(A)(i) of the Act. Furthermore, we note that, since we have additionally evaluated all critical habitat as if it were unoccupied at the time of listing and determined that all designated areas meet the “essential for conservation” standard of section 3(5)(A)(ii), the presence of the essential physical or biological features or PCEs is not determinative.

(9) *Comment:* The same private organization stated that designation of non-habitat younger forest stands as critical habitat has a substantial economic impact, because, absent such designation, consultation under the jeopardy standard would not be

required for actions limited to non-habitat younger forest stands, since those actions would be “no effect” on the marbled murrelet. By requiring consultation on actions limited to non-habitat younger forest stands that would not otherwise occur, there is a substantial risk that some of those actions would run afoul of the adverse modification standard, and impose a substantial administrative cost on the consulting agencies.

Our response: Section 4(b)(2) of the Act requires that we consider the potential economic impacts of a critical habitat designation. We consider the economic impacts of critical habitat to be those impacts that would not occur but for the designation of critical habitat; that is, those costs that are attributable solely to the proposed critical habitat, above and beyond the “baseline” costs already incurred for the species. As fully described in our proposed rule (pp. 51518–51519, 80 FR 51506; August 24, 2015), in this case the baseline for our analysis is the critical habitat that has been in place for the marbled murrelet since 1996, as revised in 2011. Our proposed rule focused solely on evaluating this existing critical habitat for the purpose of determining whether all areas meet the statutory definition under the Act; we did not propose any changes to the critical habitat designation already in place beyond the clarification of areas considered occupied or unoccupied at the time of listing, and a detailed description of how those areas meet the statutory definition of critical habitat. In considering the potential economic impacts of our proposed rule, we, therefore, contemplated a possible change in occupancy status of some areas of critical habitat as a result of our assessment. That is, we evaluated whether there would be any additional costs incurred as a result of our proposed rule, should we determine that some areas of critical habitat currently considered to be occupied by the marbled murrelet would change to “unoccupied” or vice versa.

Whether a subunit or action area is considered “occupied” by the species is irrelevant to the effect determination for critical habitat analysis, because the analysis is based on impacts to the PCEs, not impacts to the species. For this reason we did not anticipate any incremental economic impacts from our proposed rule. Federal agencies have been consulting under section 7 of the Act on impacts to PCE 1 and PCE 2 for marbled murrelet critical habitat since 1996. As described in detail in our proposed rule (p. 51520, 80 FR 51506; August 25, 2015), we contacted all Federal agencies with whom we have consulted on marbled murrelet critical habitat over the past 20 years to confirm our understanding that they consult on effects to critical habitat through an analysis of the effects to PCEs. Furthermore, we specifically inquired whether our proposed rule would be likely to result in any additional economic impacts on their agencies, should any areas change in occupancy status. All of the agencies that responded confirmed that they did not anticipate any additional costs as a result of the clarification of critical habitat subunits occupied at the time of listing.

(10) *Comment:* The same private organization stated that the Service incorrectly determined that critical habitat designation will not affect activities that do not have Federal agency involvement because, in Washington and California, the designation triggers legal obligations under State laws. Therefore, the Service should account for additional costs sustained by private landowners and revise the determination that designating critical habitat will result in no additional (incremental) economic impacts.

Our response: As required by section 4(b)(2) of the Act, we considered the potential economic impacts that could result as a consequence of our proposed rule. As described on pages 51518–51520 of the proposed rule (80 FR 51506; August 25, 2015),

the baseline for this analysis is the critical habitat designation in place today. The proposed rulemaking was focused solely on evaluating the current critical habitat designation—those areas designated in 1996, as revised in 2011—for the purposes of determining whether all of those areas meet the statutory definition of critical habitat.

We are not proposing any changes to the critical habitat designation that is already in place beyond this clarification of areas considered occupied or unoccupied at the time of listing, and a detailed description of how those areas meet the statutory definition of critical habitat. We evaluated whether there would be any incremental costs incurred if there was a change in status of a critical habitat subunit from unoccupied to occupied (see our response to Comment 9, above). Incremental costs are those costs that are solely attributable to the proposed critical habitat rulemaking, over and above costs incurred for the conservation of the species absent the proposed critical habitat action. In this case, because there is no change in the geographic areas designated as critical habitat, the current designation would not trigger any additional obligations under State laws that had not already been triggered by the initial 1996 designation; therefore, there would be no indirect incremental impacts of this rulemaking in relation to State laws as suggested by the commenter. In addition, for the most part, private lands in Washington and California that were included in the final 1996 designation were known to be used by marbled murrelets; therefore, any legal obligations of the landowners would be primarily associated with the presence of the listed species, and would not be attributable solely to the designation of critical habitat (in other words, those obligations would have been realized regardless of critical habitat designation).

Under the Regulatory Flexibility Act, Federal agencies (including the Service) are required to evaluate the potential incremental impacts of a rulemaking only on directly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the Agency is not likely to adversely modify critical habitat. Therefore, only Federal action agencies are directly subject to the specific regulatory requirement imposed by critical habitat designation (avoiding destruction or adverse modification of critical habitat). Under these circumstances, it is the Service's position that only Federal action agencies will be directly regulated by this designation.

Required Determinations

Regulatory Planning and Review (Executive Orders 12866 and 13563)

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory

objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 *et seq.*), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5

million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

The Service’s current understanding of the requirements under the RFA, as amended, and following recent court decisions, is that Federal agencies are required to evaluate the potential incremental impacts of rulemaking only on those entities directly regulated by the rulemaking itself and are not required to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the Agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7 only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this designation. There is no requirement under RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Consequently, because no small entities are directly regulated by this

rulemaking, the Service certifies that, if promulgated, the final critical habitat designation will not have a significant economic impact on a substantial number of small entities.

During the development of this final rule we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Based on this information, we affirm our certification that this final critical habitat designation will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute “a significant adverse effect” when compared to not taking the regulatory action under consideration. Our consideration of potential economic impacts finds that none of these criteria are relevant to this analysis, thus, energy-related impacts associated with marbled murrelet conservation activities within critical habitat are not expected. This final rule only clarifies how the designated critical habitat meets the definition of critical habitat under the Act. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of

Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because this final rule only clarifies how the designated critical habitat meets the definition of critical habitat under the Act. The rule does not change the boundaries of the current critical habitat; therefore, landownership within critical habitat does not change, and a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), we analyzed the

potential takings implications of the proposed determination of critical habitat for the marbled murrelet. This final rule clarifies whether and how the designated critical habitat meets the definition of critical habitat under the Act; there are no changes to the boundaries of the current critical habitat, so landownership within critical habitat does not change. Thus, we conclude that this final rule does not pose additional takings implications for lands within or affected by the original 1996 designation. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. Therefore, based on the best available information, as described above, we confirm the conclusions we reached in 1996 that the final determination of critical habitat for the marbled murrelet does not pose significant takings implications.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A Federalism assessment is not required. From a Federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical and biological features of the

habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist these local governments in long-range planning (because these local governments no longer have to wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have reconsidered designated critical habitat for the marbled murrelet for the purpose of assessing whether all of the areas meet the statutory definition of critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the final rule identifies the elements of physical or biological features essential to the conservation of the marbled murrelet.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal

Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

There are no tribal lands designated as critical habitat for the marbled murrelet.

References Cited

A complete list of all references cited in this rule is available on the Internet at <http://www.regulations.gov>, at Docket No. FWS–R1–ES–2015–0070. In addition, a complete list of all references cited herein, as well as others, is available upon request from the Washington Fish and Wildlife Office (see **ADDRESSES**).

Authors

The primary authors of this document are the staff members of the Washington Fish and Wildlife Office, U.S. Fish and Wildlife Service (see **ADDRESSES**).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: _____ July 5, 2016

Signed: _____

Karen Hyun

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks.

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